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THE BUILDING CODE

OF THE

TOWN OF

MILFORD, CONN.

1918

ARCHITECTS'

AND

BUILDERS' GUIDE

The Lyon Printery, Milford, Conn.

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AN ORDINANCE ENTITLED "THE BUILDING CODE OF THE TOWN OF MILFORD, CONN."

Be it Ordained by the Selectmen of the Town of Milford:

CHAPTER I.

ADMINISTRATION AND SUPERVISION.

Name

Section 1. The name and title of this ordinance shall be "THE BUILDING CODE," and it shall be known and cited as such.

Liberally Construed

Sec. 2. The Building Code is hereby declared to be a remedial ordinance and shall be liberally construed, so as to secure the beneficial interests and purposes intended, and shall apply to all parts of the Town.

The Rules of the Code shall be applied to gas appliances only where gas is specifically designated.

Object and Scope

Sec. 3. The object and scope of this ordinance are the governing and regulating of the construction and erection, remodelling, alteration, repairing, moving and removal, and securing of buildings of any description in the Town of Milford, and providing for the safety of buildings, and the safe use of them, and providing for all other matters pertaining to buildings and building operations in said Town.

Sec. 4. It shall be unlawful and subject to the penalties hereinafter provided for any person, persons, firm, or corporation to construct, erect, repair, alter, add to, move or remove any building or portion thereof, or to carry on any building operations in the Town of Milford, Connecticut, except in compliance with the terms and provisions of this Code.

POWERS AND DUTIES OF BUILDING INSPECTOR

Order Work Stopped—Render Building Safe

Sec. 5. The Building Inspector shall have the authority to stop the construction of any building, or the making of any alterations or repairs of any building, within said Town, when the same is being done in a reckless or careless manner, or in violation of this Code or any ordinance of said Town, and to order, in writing, or parole, any and all persons in any way or manner whatever engaged in so constructing, altering, or repairing any such building, to stop and desist therefrom; and to have the authority, if he find any building or part thereof in an unsafe condition, and so that said unsafe condition may be averted by the immediate application of precautionary measures, to cause such precautionary measures to be taken, and all work necessary to render said building or any part thereof safe to be done after having served written notice upon the owner, lessee, occupant, or agent of said building, personally.

Dangerous Buildings to be Torn Down—How Reported

The said Building Inspector shall have authority to direct the fire department, after written notice has been served upon the owner, lessee, occupant, or agent personally, or without such notice if delay in serving such notice would in his opinion imperil the public safety, to tear down any defective or dangerous wall, stack, chimney, or any building or any part thereof, or in case of the destruction or partial destruction by

fire, or by the action of the elements, any part of the building left standing, that is in his opinion unsafe, and it shall be the duty of the Fire department to execute said order forthwith; and said Inspector shall immediately after such removal make report in detail to the selectmen, the assessors of the Town and the owner, giving in detail the conditions necessary for such action; and if the owner of such building is a non-resident of the Town, a copy of such report shall be sent to his last known address, and a like copy served upon his agent or lessee of such premises.

Examination of Buildings—To be Made Safe—Inspector to do Work. When.—Cost. How Paid?

The said Inspector is hereby empowered and whenever in his judgment occasion may require, he shall enter into and upon any building, staging, other structure, or premises for the purpose of examining the same in relation to its proper ventilation, sanitation, and safety; and may make such orders in reference thereto as to him seems proper to the fulfillment of the provisions of this Code; and may make examinations of any buildings or premises to investigate divergence from or failure to comply with the provisions of this Code. And if the owner or lessee of such building, staging, or structure shall fail or neglect to comply with the requirements of such orders, the said Building Inspector, upon the written order of the Board of Selectmen may enter upon such premises, hire necessary help, and perform such work as is necessary in the judgment of the Building Inspector to be immediately performed, so as to secure public and private safety. The expenses so incurred shall be a lien on the property, and if the same remain unpaid sixty days or more after legal notice, which shall be given by the Town Clerk, that the same is due, an addition of three-quarters of one per centum shall be made to the amount of such assessment or expense for each month the same shall so remain unpaid after said lien is filed, and the same shall be collectable as a part of such assessment or expense, and be and remain a lien on such property in like manner and subject to the same modes of enforcement and collection as the principal sum to which the same is added.

Plans to be Filed Before Commencing Operations—To Show What?

Sec. 6. Before the erection, construction, or alteration of any building or part thereof, or shed, extension, or piazza is commenced, the owner, architect, or builder shall file with the Building Inspector a clear statement in writing of the proposed improvement, building, or alteration, together with a copy of the plans and specifications of the same, which statement shall show the size and map of the land upon which the structure referred to is to be erected or altered, and the distance of such proposed erection, alteration, or construction from the street line and from adjoining buildings on the same or adjacent lands or lots, a record of which shall be kept in the office of said Inspector.

Extending Beyond Building Line

No part of any building shall extend beyond the building line on any street, except bay windows and cornices above the first story, and such projection beyond the building line shall not exceed thirty inches; provided, however, that in no case shall any building or part of a building extend beyond the street line.

Permit to be First Obtained

And the erection, construction, or alteration of such building or part thereof, shed, extension, or piazza, shall not be commenced or proceeded with until the said owner, architect, or builder shall receive a certificate or permit from said Inspector, after an examination by the Building Inspector into such plans and specifications. And after he is satisfied that such sufficient means of fire protection, ventilation, sanitation, and general construction as therein described are provided as are conducive to safety and sanitation, and are otherwise as provided in this Code.

he shall issue said permit. Said plans and specifications shall remain on file at the office of the Building Inspector for one month after the completion of said building.

Drawings—Kind Required

Sec. 7. All plans and drawings which are to be filed with the Building Inspector, as provided in this Code, shall be drawn to a scale of not less than one-eighth of an inch to the foot on paper or cloth, in ink or by some process that will not fade or obliterate. All distances and dimensions must be accurately figured and drawings made explicit and complete, showing the sewerage and drain pipes, and location of all plumbing fixtures within such building. Each set of plans presented for permit must be accompanied by specifications describing all materials to be used in the proposed building, and both the plans and specifications must be approved by the Building Inspector before a permit is granted. And no detail or working drawing at a lesser scale than one-half inch to one foot shall be submitted to said Building Inspector. Special drawings to illustrate any particular point or points shall be furnished when required.

Plans, etc., not to be Altered—Alterations Allowed When

Sec. 8. No deviation from the plans and specifications submitted to the Building Inspector which shall affect the safety or sanitary conditions of the building, shall be permitted without first securing a permit from the Building Inspector.

Fees For Permits

Sec. 9. When the cost of any building, alteration, or addition thereto, as herein specified, as estimated by the Building Inspector, does not exceed the sum of ninety-nine dollars, there shall be no fee, and when the cost does not exceed the sum of five hundred dollars, the fee for the permit, as provided in this Code, shall be one dollar; when the cost as so estimated is between five hundred dollars and two thousand dollars, two dollars; and when the cost, as so estimated, is in excess of two thousand dollars, two dollars plus one dollar for each one thousand dollars or fraction thereof in excess of two thousand dollars.

Permits Good for Six Months—Period Extended When

If, after a permit for the erection, alteration, or repair of any building shall be granted, the operation called for by the said permit shall not be commenced within six months from the date of said permit, a new permit shall be taken out by the owner or his agent, and the fees herein fixed for the original permit shall be paid therefor before any work on any such building is carried on or commenced; unless the commencement of such work has been delayed on account of strikes or unavoidable occurrence, of which the Building Inspector shall be the sole judge.

Work Ordered Stopped When—Work to be Suspended Until Decision of Board

Sec. 10. The said Building Inspector shall have authority to order stopped and suspended any and all work or building operations of any character whatsoever, which he deems being done or constructed in a careless, unsafe or unsanitary manner; and if the orders of said Inspector are not obeyed and the work so stopped or suspended, the contractor, foreman, person, or persons so disobeying such orders shall be liable to arrest, and upon conviction in the Town Court of said Town of Milford, shall be fined not more than fifty dollars, or imprisoned in the County Jail not more than six months, or both; provided, however, that any person who deems himself aggrieved by such order or orders of the said Inspector shall have the right of appeal to the Board of Selectmen for a hearing, which hearing the said Selectmen shall order and hold within at least three days of the service of the aforesaid order, at which time the said Selectmen shall hear the parties in interest, inquire into the facts, and render such decision as to them seems meet and proper; but,

pending such hearing and the rendition of said judgment or decision all building operations and work complained of as aforesaid shall be suspended and held in abeyance, under the penalty hereinabove provided.

CHAPTER II

DEFINITIONS.

Sec. 11. Alteration.—Any change, addition, or modification in construction.

Sec. 12. Apartment House.—A building which shall be designed for or used as a residence for three or more families or households, living independently of each other, with independent plumbing facilities.

Sec. 13. Areas.—Open sub-surface spaces adjacent to a building.

Sec. 14. Attic Story.—A story situated wholly or partly in the roof.

Sec. 15. Basement.—A story suitable for occupancy, partly, but not more than one-half, below the grade.

Sec. 16. Bay Window.—A window projecting from the outer face of a wall.

Sec. 17. Building.—Any structure erected by art and fixed upon or in the soil, composed of several pieces, and designed for use in the position in which so fixed.

Sec. 18. Building Line.—A line beyond which property owners or others have no legal or vested rights to extend a building or any part thereof, without special permission and approval of the proper authorities; ordinarily a line of demarcation between public and private property, but also applied to a building restriction line as the same may be established.

Sec. 19. Building Owner.—The owner, agent, or trustee of the building or premises under consideration, construction, alteration, removal, repair, or effected under this Code.

Sec. 20. Cellar.—That portion of a building not suitable for habitation below the first floor of joists, if wholly or partly below the level of the adjoining street or ground.

Sec. 21. Columns.—Isolated, perpendicular supports of wood, stone, iron, steel, or other structural material.

Sec. 22. Court.—An open unoccupied space, other than a yard, on the same lot with a building. A court not extending to the street or yard is an Inner Court; a court extending to the street or yard is an Outer Court; if it extends to the street it is a Street Court; if it extends to the yard it is a Yard Court.

Sec. 23. Factor of Safety.—The quotient obtained by dividing the crushing load by the safe load.

Sec. 24. Footings.—The first course or courses laid at the bottom of a foundation wall or pier.

Sec. 25. Foundations.—The lowest walls or supports of a building.

Sec. 26. First Story.—The story the floor of which is at or first above the level of the sidewalk or adjoining ground; the other stories to be numbered in regular succession, counting upward.

Sec. 27. Frame Building.—A building or structure of which the exterior walls are constructed of wood. Buildings sheathed with boards and partially or entirely veneered on the outside with four inches of brick work or other masonry shall be deemed frame buildings. Wood frames covered with metal shall be deemed frame buildings.

Sec. 28. Grade.—The surface of the ground, court or sidewalk adjoining the building.

Sec. 29. Girder.—A horizontal structure support which carries floor beams or joists, or walls over openings, or other loads.

Sec. 30. Ground Floor.—The floor which is first above and near the level of the grade.

Sec. 31. Hall.—(a) A Public Hall is a hall, corridor, or passageway used in common by all the occupants within a building.

(b) A Stair Hall includes the stairs, stair landings, and those portions of the public halls through which it is necessary to pass in going between the entrance floor and the roof.

(c) Assembly Hall includes all

churches, convention halls, auditoriums, exposition buildings, music halls, railroad depots, or that part of any building containing an assembly room for a concourse of more than one hundred people.

Sec. 32. Height of Building.—The perpendicular distance from the center of the sidewalk in front to the highest point of the roof. If the total fall of grade on any side exceeds ten feet in the length of the building, the height shall be measured at the lowermost corner; and when the height of a building is limited, it shall be terraced or stepped off at every ten feet change of grade.

Sec. 33. Height of a Wall.—The height of a wall is measured from its base line either at the grade or at the top of a girder to the top of the coping or the center of the highest gable; foundation and retaining walls are measured from the grade downward.

Sec. 34. Height of a Story.—The perpendicular distance from top to top of two successive tiers of floor beams.

Sec. 35. Hotel.—Any building or part thereof designed to be used or used for supplying shelter and food or shelter to residents or guests and having a public dining room, cafe, or office, or either.

Sec. 36. Inspector. — Inspector shall mean the Building Inspector of the Town of Milford.

Sec. 37. Incombustible Roof or Non-Combustible Roof.—On buildings and sheds, a roof covered with an incombustible material not subject to ignition or combustion from sparks of fire on the surface of the roof, shall be considered a non-combustible or incombustible roof.

Sec. 38. Incombustible Stud Partition.—One plastered on both sides upon metal lath, or plaster board, wire cloth for the full height, and fire-stopped between the studs with incombustible material eight inches high from the floor and at the ceiling.

Sec. 39. Incombustible Material. —When referred to as a structural material—brick, stone, terra cotta, concrete, iron, or steel.

Sec. 40. Length of a Building.—Its greatest lineal dimension.

Sec. 41. Lintel.—The beam or girder over an opening with ends resting on masonry.

Sec. 42. Loads on Buildings.—(a) Dead load shall consist of the weight of walls, floors, roofs, partitions, and all permanent construction.

(b) Live load shall consist of all imposed, fixed, or transient loads, other than dead, due to the use and occupancy of the building and its exposure to wind and pressure.

Sec. 43. Lodging House.—A building designed or used for supplying shelter to lodgers, but in connection with which no public cafe or dining room is maintained.

Sec. 44. Mill Construction.—That form of construction in which heavy posts and girders with wide spacing support floors and roofs of heavy planking.

Sec. 45. Ordinary Construction.—Wood joists with wood or iron posts and beams.

Sec. 46. Owner.—Any person, firm, corporation, or agent for the same, controlling property in the Town of Milford.

Sec. 47. Office Building.—Shall mean and include every building which shall be divided into rooms above the first story and be intended and used for office purposes, and no part of which shall be used for living purposes, except for the janitor and his family.

Sec. 48. Partition.—An interior sub-dividing wall.

Sec. 49. Piers.—Isolated masses of brickwork or masonry forming supports.

Sec. 50. Post.—Isolated perpendicular wooden support.

Sec. 51. Public Buildings.—All buildings devoted in whole or in part to the use of the general public, either for the purposes of state or places of assemblage.

Sec. 52. Repairs.—The reconstruction or removal of any part of an existing building for the purpose of its maintenance in its present class

of construction and grade of occupancy.

Sec. 53. Reinforced Concrete.—Portland cement concrete in which are imbedded steel or wrought iron members to take tension or shearing strains.

Sec. 54. Shed.—A rough or unfinished structure for storage, or an open structure for temporary shelter.

Sec. 55. Story.—The space from top to bottom of any two successive floor beams.

Sec. 56. Skeleton Construction.—That form of construction in which all loads and stresses are transmitted to the foundations by a skeleton of framework of metal.

Sec. 57. Street Line.—The line of demarcation between a street and the abutting property; the inner line of the sidewalk of the required width.

Sec. 58. Tenement House.—Any house or building, or portion thereof, which is rented, leased, let or hired out, to be occupied, or is arranged or designed to be occupied, or is occupied as the home or residence of three families or more living independently of each other, and doing their cooking upon the premises, and having a common right in the halls, stairways or yards.

Sec. 59. Theatre.—A building or portion of a building in which it is designed to make a business of the presentation of dramatic or other performances for the entertainment of spectators, and having a permanent stage for said performances which can be used for scenery and other stage appliances.

Sec. 60. Thickness of Wall.—The minimum thickness of such wall exclusive of air space.

Sec. 61. Vault, Sidewalk.—An underground construction beneath the sidewalk.

Sec. 62. Vault, Fire-Proof.—A room or space in a building with floor, side-walls, ceiling and doors constructed of fireproof material.

Sec. 63. Veneer.—The outer facing of brick, stone, concrete, tile, or metal of an inclosing wall, used for the protection or ornamentation of the backing.

Sec. 64. Veneered Building.—A frame structure, the walls of which are covered above the foundation wall with brick or stone four inches in thickness.

Sec. 65. Walls (a) Apron.—That portion of an inclosing wall between the door and window sills of a story and the door and window heads or lintels of the next story below.

(b) Bearing Wall.—The wall on which either or both the floor and roof construction rest.

(c) Curtain Wall.—The inclosing wall of an iron or steel skeleton frame, or the non-bearing portion of an inclosing wall between piers.

(d) Division Wall.—The bearing wall running from front to rear subdividing a building.

(e) Dead Wall.—A wall without openings.

(f) External Wall. — Any outer wall of a building other than a party wall.

(g) Fire Wall.—The coping or parapet walls above the roof. Also any division or partition wall dividing spaces into limited areas for fire protection purposes.

(h) Foundation Walls.—That portion of an inclosing wall below the first tier of floor joists or beams nearest and above the grade line; and that portion of any interior wall below the basement or cellar floor.

(i) Length of.—The distance between the centers of adjoining front, rear, cross, or return walls, irrespective of any intermediate steel or light combustible or non-return brick partition.

(j) Partition.—Any interior wall of a building.

(k) Party.—Every wall used, or built in order to be used, as a separation of two or more buildings. A wall built upon the dividing line between adjoining premises for their common use.

(l) Retaining.—A wall built to resist lateral pressure.

Sec. 66. Warehouse.—A building used for the storage of merchandise.

Sec. 67. Wire Glass.—Wire woven

not less than one-quarter of an inch thick. The term "fireproof glass," which used in connection with wire glass, means hammered glass not less than one-half an inch thick.

Sec. 68. Yard.—An open unoccupied space on the same lot with a building, between the extreme rear line of the lot.

CHAPTER III.

QUALITY OF MATERIALS.

Quality

Sec. 69. All materials shall be of quality suitable for the purpose for which they are intended to be used, and conform to trade and manufacturers' standards. Each material must be free from imperfections whereby its strength or durability may be seriously impaired.

Materials Rejected When

The Building Inspector shall have the authority to reject materials which are unsuitable and below the usual standards, and may require tests to be made by the architect, engineer, builder, or owner to determine the strength of any structural materials.

Brick

Sec. 70. Brick shall be well burned and hard. When old bricks are used they shall be thoroughly cleaned. When the season will permit, bricks shall be wet before using.

Soft Bricks

No soft bricks shall be used in any part of a building exposed to the weather, or in any internal or external piers, nor in any part of a wall where there is a greater height than forty feet of wall above said brick.

Bond—Supports of Brick and Stonework—Bearing of Lintels

The bond of brick work shall be formed by laying one course of headers for at least every six courses of stretchers. All stone and brick work over openings exceeding four feet in width shall be supported with stone or iron lintels of sufficient strength to carry the superimposed weights, excepting where such stone or brick work shall be supported with substantial stone or brick arches. All lintels supporting stone or brick work must bear on stone, brick, or iron of sufficient strength.

Stone

Sec. 71. Stone shall be sound and hard and of sufficient dimensions for its intended use.

Sand

Sec. 72. Sand used for mortar shall be clean, sharp grit sand, free from loam. dirt, or organic matter.

Lime

Sec. 73. Lime shall be thoroughly burned quick lime of good quality and well slacked before using.

Cement

Sec. 74. Any natural cement which is a product of calcination of natural rock such as Akron, Louisville, and other cements; slag Portlands will be classed as a natural cement.

Portland Cement

Sec. 75. The Standard Portland cement of commerce, either domestic or foreign which shall be capable of passing the requirements as set forth in the "Standard Specification for Portland Cement" by the American Society for Testing Materials.

Test

Neat Cement.	Strength
24 hours in moist air	200 lbs.
7 days (1 day in moist air, 6 days in water)	550 lbs.
28 days (1 day in moist air, 27 days in water)	650 lbs.

MORTARS

Lime

Sec. 76. A properly proportioned mixture of lime and sand, not more than three parts sand to one part unslacked lime.

Lime and Cement Mortar

Sec. 77. A properly proportioned mixture of cement and sand with lime added, not more than four parts sand to one part each of dry cement and slacked lime.

Cement Mortar

Sec. 78. A properly proportioned mixture of cement and sand, not more than four parts sand to one of Portland cement, nor more than three parts sand to one of Rosendale cement.

Mortar for Plastering How Made

Sec. 79. Mortar for plastering shall be made as follows: The mortar shall be slacked, made into putty, and cooled before putting in the hair which must be well separated. One bushel of hair will be required for every three barrels of putty; one and one-half barrels of sand to one barrel of putty may be mixed for the first or scratch coat, after being thoroughly mixed as above. The said mixture must be stacked for at least three days before using. The said mortar shall be used on lath surfaces with a second coat of mortar in which two and one-half barrels of sand to one barrel of putty, and less hair may be used.

Any of the approved patented wall boards or plaster board may be used where strength is not particularly required.

Concrete

Sec. 80. When the structural use of concrete is proposed, a specification stating the quality and proportion of materials and the methods of mixing the same shall be submitted to the Building Inspector.

Ingredients

Concrete for foundations shall be made of at least one part cement to three parts of sand and five parts of clean, broken stone, free from dirt and dust, of such size as to pass in any way through a two-inch ring, or good, clean gravel may be used in the same proportion as broken stone.

Thoroughly Mixed

The ingredients of the concrete shall be thoroughly mixed to the desired consistency and the mixing shall continue until the cement is evenly distributed and the mass is uniform in color and is homogeneous. Methods of measurement of proportions of the various ingredients, including water, shall be used, which will secure separate uniform measurement at all times.

Machine Mixed

Where the conditions will permit, a machine mixer of a type which insures a proper mixing of the materials throughout the mass, shall be used.

Hand Mixed

When it is necessary to mix by hand the mixing shall be on a water-tight platform and a special precaution must be taken to turn the materials until they are homogeneous in appearance and color.

Consistency

The materials must be mixed wet enough to produce a concrete of such a consistency as will flow into the forms and about the metal reinforcement, and which on the other hand can be conveyed from the mixer to the forms without separation of the coarse aggregate from the mortar.

Timber

Sec. 81. All timbers and wood shall be of good sound material, free from rot, large, or loose knots, shakes, or any imperfections whereby the strength may be impaired, and be of such size and dimensions as the purposes for which the building is intended require.

Iron and Steel

Sec. 82. All structural wrought or cast iron, or steel, in quality, requirements of tests, workmanship, and in assemblage and inter-connections of shapes shall be in accordance with the standard specifications of the Association of American Steel Manufacturers, as given in the hand book of the respective standard manufacturers; provided, that for buildings of skeleton frame fireproof construction, the Building Inspector may, at any time, require the owner to engage recognized experts to supervise the mill, shop, and field work, and who shall file certified copies of their reports on the progress of the work for the approval of said Building Inspector, and no work shall be concealed or built upon until the Building Inspector has been furnished satisfactory proof that it is up to the accepted standards.

Stresses in Materials How Calculated —Factors of Safety How Determined

Sec. 83. The stresses used in materials hereafter to be used in construction shall be the calculated stresses due to their "dead load" plus

the applied "live load." The allowable factors or units of safety or the dimensions of each piece or combination of materials required in a building or structure, if not given in this Code, shall be ascertained by computation according to the rules prescribed by the standard modern authorities on strength of materials, applied mechanics and engineering practice, provided, that the Building Inspector may, and in cases of trussed or reinforced concrete buildings two or more stories high shall, require the owner or architect or engineer to submit a certified copy of such computation or strain sheets for examination and approval with the application for the Building Permit.

CHAPTER IV.

CALCULATION OF STRESSES.

Tests of Filled Ground

Sec. 84. Sound, natural earth shall not be loaded to more than the following in tons per square feet:

Gravel and coarse sand, well compacted or hard pan	6 tons
Hard rock	20 tons
Fairly hard rock	6 tons
Dry, hard clay or fine sand	4 tons
Moderately dry clay or moderately compact sand	2 tons
Soft sand or clay or undisturbed alluvial soils	1 ton

No foundation shall be started on filled ground until proper tests have been made and permit granted by the Building Inspector. When a doubt arises as to the safe sustaining power of the earth upon which a building is to be erected, the Building Inspector may order borings to be made or direct the sustaining power of the soil to be tested by and at the expense of the owner of the proposed building.

Sec. 85. Allowable safe load in ton per square foot:

Laid in Mortar	Lime	Lime and Portland Cement	Hydraulic Cement	Portland
Common Kiln Run	6	8	10	13
Common Selected Hard	6	10	12	16
Hard Pressed Hydraulic or Vitrified Shale or paving	6	12	14	18
Stone Rubble, irregular bonded	4	5	7	10
Stone Rubble, Coursed, well bonded	6	7	9	11
Stone Ashlar or block with full beds	6	12	15	20
Concrete: Cement 1, Sand 2, Stone 4			8	16
Concrete: Cement 1, Sand 2, Stone 5			6	14

Terra Cotta Blocks

Sec. 86. Terra Cotta building blocks built in a wall facing may be loaded seven tons per square foot of effective section, if unfilled, and ten tons per square foot, measured on the beds, when filled solid with brickwork or concrete.

Brick Inner Facing—Loads on Hollow Tile Blocks—Loads on Portland Building Blocks.

Sec. 87. When hard, hollow bricks are used as the inner facing of a hard selected brick wall, the wall shall be estimated as if laid up in kiln run brick. Where the hollow tile blocks are used for building partitions or as inclosing walls, the joints shall be well filled with mortar, and the effective bearing parts of the tiles shall not be loaded more than one hundred and fifty pounds to the square inch for hard fire clay tiles, nor more than one hundred pounds per square inch for hard ordinary clay tiles, nor more than seventy-five pounds per square inch for porous tiles. Portland building blocks used for outside walls and partitions shall not be loaded to more than one hundred and fifty pounds per square inch of available or effective section.

Hollow Tile Blocks Used When

Sec. 88. Hollow tile blocks may be used for residences and light construction not over three stories in height. The blocks shall be twelve inches thick for the first story and ten inches thick for the second story, and eight inches for the third story, and in two-story buildings the blocks shall be eight inches thick for the first story and eight inches thick for the second story, and shall be laid in mortar composed of one part Portland cement, two and one-half parts sand, and not more than one-tenth part of lime putty. The said blocks must be well burnt, hard and dense.

Made Solid When

Where joists rest upon walls of hollow tile blocks, the bearing surface shall be made solid with Portland cement, concrete or brick laid in Portland cement mortar.

If the walls are made of hollow tile and exposed to the weather, such hollow tile must be covered on the exposed sides with at least 3-4 inch Portland cement stucco and be well scored with grooves to receive coating.

Girders and Joists Resting on Walls

Sec. 89. Wherever girders or joists rest upon walls so that there is a concentrated load on the block of over one ton, the blocks supporting the girders or joists must be made solid by filling with Portland cement concrete. Where such concentrated loads shall exceed three tons, the blocks for two courses below and for a distance extending at least eighteen inches each side of such girder, shall be made solid. Where the load on the wall exceeds five tons, the blocks for three courses beneath it shall be made solid with similar material. Wherever walls are decreased in thickness the top courses of the thicker wall must be made solid in the same manner.

Loads on Dense Hollow Blocks

Provided always, that no dense hollow blocks shall be loaded to an excess of three hundred pounds per square inch of net end section in compression; or if ordinary semi-porous blocks are used, they shall not be loaded to exceed two hundred pounds per square inch of net section.

Piers to be Solid When

All piers or buttresses that support loads in excess of five tons, shall be filled solid with Portland cement concrete. Lintels spanning over four feet six inches in the clear shall rest on blocks filled solid with concrete.

Crushing Strength.

All hollow blocks shall be subject to the regular inspection provided for by this Code for other masonry building material. The ultimate crushing strength shall be at least seven times the load they are required to support.

Live Loads Allowed.

Sec. 90. The minimum "live loads," uniformly distributed, in pounds per square foot to be imposed on floors in buildings as follows:

"Public Building proper"	100
"Detention Buildings"	
In cells or wards	60
In the public corridors, halls, stairways, offices, chapel, clinical assembly or court rooms	90
"School Buildings"	
In class rooms	70
In the corridors, halls, and stairways, laboratories and assembly rooms	90
"Assembly Halls"—"Theatres"	
In auditoriums with fixed seats	90
In lobbies, passageways, corridors, stairways, and in auditoriums with movable seats	100
In any hall used for dancing	150
"Hotels"	
In private rooms and apartments	50
In halls, corridors, passageways, stairways, offices, lobbies, dining rooms, cafes, and rooms for public use	90
"Office Buildings"	
In offices proper	60
In all hallways, stairs, lobbies, and rooms for the common use of tenants	100
"Store Buildings"	
For light merchandise,	

Ground floor 125
Balance of building 100
For heavy merchandise, at least 200
"Warehouse"—"Factory" — "Workshop"
When the nature of their occupancy is general, the loads will be the same as for store buildings, except in cases where the buildings are used for the sale, storage or manufacture of very light, or of heavy merchandise or machinery, when they shall be proportioned to the loads they carry.
"Apartment Houses"—"Clubhouses"
Same as for "Hotels.'
"Tenement Houses."
In private rooms and apartments 50
In public halls, corridors and stairs 50
"Miscellaneous"
For floors of miscellaneous buildings and for floors not included or loaded more heavily than in the above classification and for floors subject to vibration from machinery, or that of drill rooms, riding schools, etc., or those supporting moving loads, the Inspector shall determine the imposed loads by calculation.
Roofs on all buildings 40
Attic floors when not used for storage 20
When used for limited habitation or storage, never less than three-quarters of the average load assigned to the floor below.
Stairs and fire-escapes, generally, unless otherwise provided 80
Sidewalks, vaults and coverings over sidewalks, lifts and coal holes 300

Length of Columns, Piers and Posts

Sec. 91. No free standing or built in column, pier or post shall exceed the following proportions of the least side or diameter to the height without being anchored, stayed, or tied by beams or girders in at least two directions at right angles to each other.

Brick piers 1: 8
Block stone piers 1:10
Wooden posts 1:16
Cast iron columns 1:20
Wrought iron columns 1:40
Steel columns 1:44

Size of Columns, Posts and Piers

Sec. 92. When used as principal supports for walls or floor construction, brick or stone piers shall not be less than twelve inches by twelve inches; cast iron columns not less than five inches in their least diameter or width, and no shell shall be less than one-twelfth of the diameter or side, but never less than three-quarters of an inch thick; wrought iron or steel built-up columns not less than six inches in their least diameter or side, with not less than one-quarter inch metal in any of their parts.

Loads on Foundations

Sec. 93. Steel shell columns, concrete filled not allowed less than 4 inches in diameter and must be approved by Inspector.

CHAPTER V.
EXCAVATIONS.

Inspection—Protected From Caving In

Sec. 94. Where possible, all excavations for buildings shall be made at least nine inches beyond the line of masonry to permit of inspection, and shall be properly guarded and protected by the person, persons, or corporations causing the same to be made, so as to prevent the same from becoming dangerous to life and limb, and shall be sheath piled where it may be necessary, or by some other method approved by the Building Inspector, to prevent the adjoining soil from caving in by reason of its own weight or by reason of any weight that may rest upon it.

Protection of Adjoining Building—Expense How Borne

Sec. 95. Whenever any excavation is made on land adjoining a building, the owner of the land upon which such excavation is made shall shore up, protect and take every precautionary measure to protect and save from injury or harm any footings, foundations, walls or parts thereof, or any part of the building, which is liable

to occur by reason of such excavations, provided the depth of such excavation exceeds three feet below grade. If such excavation does not exceed three feet, then any such expense shall be borne by the owner of such building.

Traffic Uninterrupted.

Sec. 96. When buildings to be erected or altered front on business thoroughfares and in congested business districts, the Building Inspector may require that sidewalk traffic be maintained without interruption by means of elevated or covered sidewalks.

CHAPTER VI.

FOUNDATIONS AND FOOTINGS.

Construction—Piles

Sec. 97. Every building except buildings erected upon solid rock, shall have foundations of brick, stone, steel, iron, or Portland cement concrete laid not less than four feet below the surface of the earth, on solid ground on level surface of rock, or upon piles or ranging timbers when solid earth or rock is not found. Piles intended to sustain a wall, pier or post shall be spaced not more than thirty-six nor less than twenty-five inches on centers, and they shall be driven to a solid bearing, if practicable to do so, and the number of such piles shall be sufficient to support the super-structure proposed.

Wood piles or posts may be used under frame buildings. Where built over water or on meadows land, they must project above the water a sufficient height to be above high tide, and building may be placed directly thereon without other foundation. Providing, however, that such building shall not be over two stories in height, and the posts or piles must be at least five inches in diameter at the small end, and not more than eight feet apart.

Dimension of Piles.

Sec. 98. No pile shall be used of less dimension than five inches at the small end and ten inches at the butt for piles of twenty feet or less in length, and twelve inches at the butt for piles more than twenty feet in length. No pile shall be weighted with a load exceeding thirty thousand pounds.

Sustaining Power of Piles—Piles, How Protected.

Sec. 99. When a pile is not driven to refusal, its safe sustaining power shall be determined by the following formula: Twice the weight of the hammer in tons multiplied by the height of the fall in feet divided by least penetration of pile under the last blow in inches plus one. The Building Inspector shall be notified of the time when test piles shall be driven. The tops of all piles shall be cut off below the lowest water line. When required, concrete shall be rammed down in the interspaces between the heads of the piles to a depth and thickness of not less than twelve inches and for one foot in width outside of the piles.

Capping Timbers.

Sec. 100. Where ranging and capping timbers are laid on piles for foundations, they shall be of hard wood not less than six inches thick and properly joined together, and their tops laid below the lowest water line.

Metal in Foundations—Footing Below Water Level

Sec. 101. Where metal is incorporated in, or forms part of, a foundation, it shall be thoroughly protected from any rust by paint, asphaltum, concrete, or by such materials and in such manner as may be approved by the Building Inspector. When footings of iron or steel for columns are placed below the water level, they shall be similarly coated, or inclosed in concrete, for preservation against rust.

Loads on Caissons

Sec. 102. When foundations are carried down through earth by piers of stone, brick, or concrete in caissons, the loads on the same shall not by more than fifteen tons to the square foot, when carried down to rock; ten tons to the square foot, when carried down to firm gravel or hard clay; eight tons to the square foot in open caissons or sheet pile

trenches when carried down to rock.

Materials Used—Base Course

Sec. 103. Foundation walls shall be built of stone, or brick, with cement mortar, or of Portland cement concrete, except foundations for frame buildings and private stables, and for buildings not more than two stories in height, which may be built with lime and cement mortar. If built of Portland cement concrete, they shall be at least four inches thicker than the wall next above them in a depth of twelve feet below the curb level, and for every additional ten feet, or part thereof deeper, thy shall be increased six inches in thickness. The footing or base course shall be of stone or concrete, or both, or of concrete and stepped up brick work, of sufficient thickness and area safely to bear the weight to be imposed thereon.

Concrete Footings—Stone Footings—Width of Base Course

Sec. 104. If the footings or base course be of concrete, the concrete shall not be less than eight inches thick. If of stone the stone shall be of large size, and at least six inches in thickness for walls, and not less than eight inches in thickness for piers, columns or posts. The footing or base course, except under frame buildings, whether formed of concrete or stone, shall be at least eight inches wider than the bottom width of walls, and at least six inches wider on all sides than the bottom width of the said piers, columns, or posts. If the superimposed load is such as to cause undue transverse strain on a footing projecting six inches, the thickness of such footing shall be increased so as to carry the load with safety, by adding extra course or courses of above dimensions. All base stones shall be well bedded and laid crosswise, edge to edge.

Stepped Up Footings

If stepped up footings of brick are used in place of stone above the concrete, the offsets, if laid in single courses, shall not exceed one and one-half inches, or if laid in double courses, then each shall not exceed three inches, offsetting the first course of brick work, back one-half of the thickness of the concrete base, so as properly to distribute the load to be imposed thereon.

Isolated Piers as Supports—Inverted Arches

Sec. 105. If, in place of a continuous foundation wall, isolated piers are to be built to support the superstructure, where the nature of the ground and character of the building make it necessary, in the opinion of the Building Inspector, inverted arches resting on a proper bed of concrete, both designed to transmit with safety the superimposed loads, shall be placed between the piers. The thrust of the outer pier shall be taken up by suitable wrought iron or steel rods and plates.

Grillage Beams

Sec. 106. Grillage beams of wrought iron or steel resting on a proper concrete bed may be used. Such beams must be provided with separators and bolts, inclosed and filled solid between with concrete. and of such size and so arranged as to transmit with safety the superimposed loads.

Headers in Stone Walls

Sec. 107. All stone walls twenty-four inches and not less than eighteen inches in thickness, shall have at least one header extending through the wall in every three feet in height from the bottom of the wall, and in every three feet in length, and if over twenty-four inches in thickness, shall have one header for every six superficial feet on both sides of the wall, laid across each other to bond together, and running into the wall at least twenty inches. All headers shall be at least twelve inches in width, and six inches in thickness, and consist of good flat stones.

Stones, How Laid

No stone shall be laid in such walls in any other position than on its natural bed. No stone shall be used that does not bond or extend into the wall at least six inches. Stones shall be firmly imbedded in

cement mortar and all spaces and joints thoroughly filled.

Thickness of External Retaining Walls

Sec. 108. External retaining walls shall be constructed of sufficient thickness safely to support the outside pressure when earth embankments are adjacent to any foundation or curb wall.

Sewer Connections Before Foundations Laid

Sec. 109. In all cases a connection with the street sewer where the same exists, shall be established before beginning the work of laying foundations. Before the walls of buildings are carried up above the foundation walls, the cellars shall be connected through drain tiles and catch basins with the street sewer. Should there be no sewer in the street, or if the cellars are below the sewer or ground water level, then provisions shall be made to prevent water accumulating in the cellars to the injury of the foundations or the occupancy of the basement cellar.

CHAPTER VII.

WALLS, PIERS AND PARTITIONS.

Table No. 1

Sec. 110. Table of thickness of brick walls for heavy buildings, such as warehouses, mercantile buildings, and factories:

Stories Stone	Basement Brick	Basement Concrete	Stories 1	2	3	4	5	6	7	8
1	18	16	14	12						
2	18	16	16	12	12					
3	20	16	16	16	12	12				
4	24	20	20	16	16	12	12			
5	24	20	20	20	16	16	12	12		
6	28	24	22	20	16	16	16	12	12	
7	28	24	24	20	20	16	16	16	12	12
8	30	24	24	20	20	20	16	16	16	12	12

The same amount of materials shall be used in piers or buttresses and curtain walls.

Table No. 2

Sec. 111. Table of thickness of brick walls for buildings with first story to be used for mercantile purposes, and upper stories for residences, or entire building for residences.

Stories Stone	Basement Brick	Basement Concrete	Stories 1	2	3	4	5	6	7	8
1	18	12	12	12						
2	18	16	14	12	12					
3	20	16	16	12	12	12				
4	24	20	18	16	12	12	12			
5	24	20	18	16	16	12	12	12		
6	28	24	20	16	16	16	12	12	12	
7	28	24	20	20	16	16	16	12	12	12
8	28	24	24	20	16	16	16	16	12	12	12

Eight-Inch Brick Walls When Allowed

Sec. 112. Separate private dwellings or those built in block form or private stables, not more than two stories high, or more than 30 ft. without break or buttress, more than 16 ft. span or with story height of not over 9 inches clear may be built of 8-inch brick walls. All eight-inch brick walls must be built with Portland cement mortar. When reinforced concrete is to be used instead of bricks or blocks, it must be at least six inches thick, and all reinforcing approved by the Inspector.

Wall Ties.

Sec. 113. All wall ties shall be of galvanized iron or steel, not less than six inches long, as approved by the Building Inspector.

Walls of Buildings Other Than Wood

Sec. 114. The walls of all buildings, other than frame or wood buildings, shall be constructed of stone, brick, hollow tile, Portland cement concrete, iron or steel, or, if approved by the Building Inspector other hard, incombustible material, and the several component parts of such buildings shall be as herein provided.

Buildings Inclosed

Sec. 115. All buildings shall be inclosed on all sides with independent or party walls.

Walls and Piers to be Bonded

Sec. 116. The walls and piers of all buildings shall be properly and

solidly bonded together with close joints filled with mortar. They shall be built to a line and be carried up plumb and straight.

Thickness Maintained

Sec. 117. The walls of each story shall be built up the full thickness to the top of the beams above.

Mason Work in Freezing Weather

Sec. 118. Walls or piers, or part of walls and piers, shall not be built in freezing weather, unless the brick and mortar be heated.

Thickess of Walls Increased

Sec. 119. When walls are more than twenty-five feet apart, four inches shall be added for every succeeding interval of ten feet or part thereof of increase of distance between them without intermediate division walls or rows of column and girder supports.

Thickness Increased For Reduction of Area

Sec. 120. When any horizontal section of wall shows more than twenty-five per cent. reduction of area on account of flues, openings, and recesses, four inches shall be added for every succeeding interval of ten per cent. or part thereof of reduction, provided that in walls of uniform thicknesses, such reduction does not exceed fifty-five per cent. of the whole, or, in masonry pier construction, not more than seventy per cent. for each bay.

Thickness Increased For Heavy Floor Loads

Sec. 121. When the floors of a building of an established height are to be loaded heavier than the maximum given in the tables of permissible loads, the thickness of walls shall be proportionately increased.

Thickness Increased For Additional Length

Sec. 122. All buildings over one hundred feet in depth, without a crosswall or proper piers or buttresses, shall have the side or bearing walls increased in thickness four inches more than is specified in the respective sections of this Code for the thickness of walls for every one hundred feet, or part thereof, that the said buildings are over one hundred feet in defth.

Walls Corbeled—Joist Hangers

Sec. 123. All party or division walls of a less thickness than twelve inches shall be corbeled, not less than three inches on sides, to receive the floor joists, or instead of corbeling, approved malleable iron or steel joist hangers may be used.

Additional Stress

Sec. 124. Where it appears that extra or additional stress shall come upon any wall or pier, extra provision shall be made for carrying the same by additional thickness of walls or additional size of pier, or the addition of proper pilasters.

Inside Portion of Walls.

Sec. 125. The inside four inches of any wall may be built of hard-burnt hollow brick, properly tied and bonded by means of full header courses every sixth course into the walls, and of the dimension of the ordinary bricks.

Linings Not Part of Thickness

Sec. 126. Where hollow tile or porous terra cotta blocks are used as lining or furring for walls, they shall not be included in the measurement of the thickness of such walls.

Hollow Walls

Sec. 127. In all walls that are built hollow the same quantity of stone, brick, or concrete shall be used in their construction, as if they were built solid, as in this Code provided, and no hollow wall shall be built unless the parts of same are connected by proper ties, placed not over twenty-four inches apart.

Recesses in Walls

Sec. 128. No recess or chase for water, soil, steam or other pipes shall be made in any exterior or in any other bearing wall to more than one-third of its effective thickness, and the recesses around said pipe or pipes shall be filled with solid masonry, or plastic incombustible material, after the pipes are in place, for the space of one foot at the top and bottom of each story. No recesses shall be made in any exterior

or other bearing walls less than twelve inches thick, and no continuous vertical recess other than flues in stacks shall be nearer than five feet to any other recess.

Channeling in Walls

Sec. 129. No channeling shall be done in walls which are less than twelve inches thick, except for small gas pipes and wire conduits. Recesses for stairways or elevators may be left in the foundation or cellar walls of all buildings, but in no case shall the walls be of less thickness than the walls of the third story, unless reinforced by additional piers with iron or steel girders or iron and steel columns and girders, securely anchored to walls on each side.

Horizontal Chase

No horizontal chase shall be more than four feet in continuous length, unless the wall is made proportionately thicker.

Wind Pressure

Sec. 130. All structures exposed to wind shall be designed to resist a horizontal wind pressure of thirty pounds to every square foot of surface thus exposed, from the ground to the top of same, including the roof, in any direction. In no case shall be the overturning moment due to wind pressure exceed seventy-five per cent. of the moment of stability of the structure. In all structures exposed to wind, if the resisting moments of the ordinary materials of construction, such as masonry, partitions, floors and connections are not sufficient to resist the moment of distortion due to wind pressure, taken in any direction on any part of the structure, additional bracing shall be introduced to make up the difference in the moments.

Calculations For Wind Pressure

In calculations for wind bracing, the working stresses set forth in this Code may be increased by fifty per cent. In buildings under one hundred feet in height, provided the height does not exceed four times the average width of the base, the wind pressure may be disregarded.

Supports of Walls

Sec. 131. It shall be unlawful to erect, construct, or build any rear, front, party, division, or partition masonry wall upon wooden girders, rafters, or lintels, or to support any such wall by any wooden support whatever; but all such supports shall be of iron, brick, or stone, and shall rest on sufficient stone or metal bearing blocks.

Header Courses in Brick Work

In all brick walls every 6th course shall be a header course, except for running bond, then every 6th course shall be bonded into the backing by cutting the course of the face brick and putting in diagonal headers behind the same, or by spliting the face brick lengthwise and backing with a continuous row of headers. If laid in other bonds, all headers must be full headers, if possible, otherwise the thickness of the wall must be 4 inches greater than would be otherwise required; and every sixth course must be full header. If running bond is used the wall must be 4 inches greater than called for.

Openings to Have Arches

Sec. 132. Openings for doors and windows in all buildings shall have good and sufficient arches of stone, brick, or terra cotta, well built and keyed with good and sufficient abutments; or lintels of stone, iron, or steel of sufficient strength, which shall have a bearing at each end of not less than five inches on the wall.

Strength of Arches

Sec. 133. All masonry arches shall be capable of sustaining the weight and pressure which they are designed to carry, and the stress at any point shall not exceed the working stress for the material used, as given in this Code.

Tie Rods

Sec. 134. Tie rods shall be used where necessary to secure stability.

Walls Not to be Carried up More Than One Story in Advance of Each Other

Sec. 135. In no case shall any wall or walls of any building be

carried up more than one story in advance of any other wall, except by permission of the Building Inspector. And this prohibition shall include the inclosure walls for skeleton buildings.

Walls to be Bonded Together

Sec. 136. The front, rear, side, and party walls shall be properly bonded together, or anchored to each other every six feet in their height by wrought iron anchors, not less than one and one-half inches by three-eighths of an inch in size, and not less than twenty-eight inches in length.

Exterior Piers Anchored

Sec. 137. All exterior piers shall be anchored to the beams or girders on the level of each tier.

Walls Coped—Coping Omitted When —Parapet Walls Two Feet Above Flat Roofs

Sec. 138. All exterior walls, on lot line and division and party walls over fifteen feet high shall have parapet or coping walls carried at least eighteen inches above the roof, and shall be coped with incombustible material. The front and rear walls, if facing on streets, alley, or open space may have the parapet wall omitted. Open balustrades shall not be placed above the cornice line of any building unless they are built of incombustible material directly over the wall below, nor shall the top rail of such balustrades be over five feet above the roof line. Parapet walls and party or division walls shall extend at least two feet above flat roofs.

Walls Furred With Wood

Sec. 139. In all walls furred with wood the brick work between the ends of the wood beams shall project the thickness of the furring beyond the inner face of the wall for the full depth of the beams.

Height of Stories

Sec. 140. The height of stories for all given thicknesses of walls shall not exceed:

First story.....16 feet in the clear
Second story.....14 feet in the clear
Third story.....12 feet in the clear
Fourth and upper stories.....11 feet in the clear

And if any story exceeds the foregoing heights, the walls of any such story and all walls below that story shall be increased four inches in thickness.

Facing of Walls—Not Part of Thickness

Sec. 141. Stone, cement block, or terra cotta facing shall be not less than four inches in thickness at any place, and shall be securely anchored to the brick backing at least every two feet vertically and horizontally. The facing wall shall not be counted as part of thickness of brick walls, unless the average thickness of facing is six inches or more, and the facing thoroughly bonded into the walls, in which case half the average thickness of facing shall be allowed in calculating thickness of wall in accordance with table.

Curtain Walls Thickness—Height

Sec. 142. No curtain wall for steel frame buildings shall be less than twelve inches, except that walls eight inches in thickness may be used between piers or steel supports not over twelve feet on centers and not over twelve feet high, for buildings, of one or two stories, when approved by the Building Inspector.

Dividing Walls in Apartment Houses

Sec. 143. In all apartment and tenement houses, three stories or more in height, the dividing walls or partitions between the apartments provided for each family, where not separated by a hall or staircase, shall be made of incombustible material. In the absence of definite sub-divisions between the apartments of different families, eight rooms shall be counted as the equivalent of one apartment. In all buildings, not of fireproof construction, there shall be for every eight rooms in any one story, dividing walls or partitions of incombustible material separating the rooms from the contiguous spaces.

Dividing Walls in Double or Block Houses

Sec. 144. In double houses or

houses in block form, not over two stories high, the dividing walls shall be of brick not less than 8 inch brick filled partition, or other incombustible material, approved by Building Inspector, extending from the cellar to one foot above the roof and two feet above flat roofs, excepting in case of steep roofs of double houses, where division walls shall be carried to under side of roof boards.

Brick Walls Around Elevator Shafts

Sec. 145. When brick walls surround stairways, elevator shafts, shaving pits and light shafts, they shall be not less than eight inches thick, but no such eight-inch wall shall be built more than eighteen feet high without lateral support or anchorage, and the total height of any eight-inch brick wall shall not exceed fifty feet.

Calculating Strength of Piers and Portions of Walls

Sec. 146. In calculating the strength of isolated piers or divisions forming portions of walls, the least dimension shall be considered in determining the loads which such piers may carry. If outside walls are of pier construction, the piers shall be graded in size according to weights to be carried, but not less than sixteen inches thick for upper story and shall increase four inches for each two stories below, they shall also be graded as to width of face according to span of bays.

Such piers shall have a width of twenty-four inches for an eight foot bay, measuring from center to center of pier, and shall increase four inches in face width, for each two feet or fraction thereof that the width of the bay is increased. Curtain or panels between piers shall be of brick and at least eight inches thick.

Height of Isolated Brick Pier

Sec. 147. No isolated brick pier shall be built whose height exceeds eight times its least dimensions, and any such pier where receiving concentrated loads, shall have suitable bearing blocks of stone or iron, so proportioned as properly to distribute the load to come upon it.

Construction

All isolated piers shall be built of cut stone, Portland cement, concrete, or good, hard, well-burnt brick laid in Portland cement.

Piers Faced

Sec. 148. In case piers are faced with pressed brick, they shall be so laid as to have proper bearings of mortar under each pressed brick, so that the strength of the pier may be fully maintained on all sides, the central part of the pier shall be laid in Portland cement.

Brick in Piers—How Laid

Sec. 149. Brick piers shall be built of good, hard, well-burnt brick of uniform size, laid in cement or lime mortar, with uniform joints throughout facing and backing, and of sufficient size to carry safely the load which they are intended to carry. Each course of brick shall be laid over the whole surface of the pier and each brick shall be thoroughly surrounded by mortar, and all shall be properly bonded, and the joints slushed full of mortar before the next course shall be laid. The top of the pier, when finished, shall be level for the cap stone, plate, or other covering.

Dividing partitions in double houses or buildings in block form

Sec. 150. The division walls between stairs or stores and living rooms shall be of brick not less than eight inches thick or other fireproof materials, approved by the Building Inspector.

Openings in Fire or Party Walls—Fire Doors

Sec. 151. Openings in the fire or party walls of buildings shall in no case exceed eight feet in width, nor ten feet in height, and above each such opening there shall be a curtain wall between the top of the opening and the ceiling line of at least three feet. The opening shall be provided with approved automatic self-closing standard fireproof doors on both sides of the wall.

Public Stairhalls Inclosed How

Sec. 152. Public stairhalls and cellar stairs in apartment blocks, or

tenement buildings, shall be inclosed by brick walls, or walls of incombustible materials of equal fire resisting capacity, and openings to separate apartments or tenements shall be by approved fire doors, and no transom shall be allowed.

Walls of Light Shafts How Constructed—Two Feet Above Roof

Sec. 153. In every building hereafter erected or altered, all walls or partitions forming interior light or vent shafts, shall be constructed of brick or of other incombustible materials, approved by the Building Inspector.

The walls of all light or vent shafts, whether exterior or interior, shall extend at least two feet above the roof, shall be of brick, hollow tile or other fireproof material approved by the Building Inspector, and covered with a ventilating skylight with openings equal to area of shaft.

Shaft Windows—Supports of Shafts

Sec. 154. The windows in said shafts shall have metal frames and sash and wire glass. Ceiling lights under shafts shall have wire glass in metal frame. Where shafts start above the first floor, they shall be supported by steel beams.

Walls of Dumb Waiters, etc.

Sec. 155. Walls of dumb waiter, clothes shutes, or other similar shafts must be built of or lined with incombustible material, and shall be provided with an approved metal clad door at each opening.

Ash Pits

Sec. 156. All receptacles for ashes shall be of galvanized iron, brick, or other incombustible material. When the ash pit is located in a basement or cellar, it shall have brick walls at least eight inches in thickness, and if the floor over the same is of wood, such pit shall be covered over with either brick, arching stone, or concrete not less than four inches thick with four inches of air space between the covering of pit and the ceiling, except for pits built directly under the trimmer arches of hearts.

No person shall store ashes on a wooden floor or in close proximity to any woodwork, whatever.

Bake Ovens—How Installed

Sec. 158. Bake ovens shall rest on solid foundations or steel beams; the sides and ends shall be at least two feet from any woodwork, and the crown or arch at least four feet from ceilings that have wood joists. The hearth in front of all bake ovens shall extend at least three and one-half feet beyond the face thereof. All woodwork over ovens shall be protected by plastering or metal.

Shaving Pits

Sec. 158. Shaving pits in all factories where wood-working machinery is used shall be constructed of brick, stone, or other incombustible material, and shall be separated from the boiler room by standard fire doors with bottom sill at least twelve inches above the floor of boiler room. All such factories shall have metal chutes leading to said shaving pits from each wood-working machine.

Walls of Kiln Drys

Sec. 159. Walls of kiln drys shall be constructed of brick or of other incombustible materials.

Smoke Houses—Protection—Walls

Sec. 160. All smoke houses shall be of fireproof construction, with brick walls, iron doors and brick or metal roof.

An iron guard shall be placed over and not less than three feet above the grate, and the hanging rails shall be of iron, and an iron grating shall be placed under the first row of hanging rails, and be not less than eight feet above the floor of the fire-pit.

The walls of all smoke houses shall be built at least three feet higher than the roof of the building in which they are located, and shall be not less than twelve inches in thickness and be coped with stone or its equivalent.

Walls of Drying Rooms.

Sec. 161. All walls, ceilings, and partitions inclosing drying rooms, when not made of fireproof material, shall be wire lathed and plastered, or covered with metal, tile, or other hard incombustile material.

CHAPTER VIII.
BOILER, OVENS, AND HEATING APPARATUS.

Flue Connections

Sec. 162. All boilers, furnaces, fireplaces, ovens, and all other heating apparatus mentioned under this chapter shall be properly connected with a flue, chimney, or stack as direct and within the shortest distance possible.

Temporary Heaters—Installation

Sec. 163. Temporary heaters for use during the erection of buildings shall be placed upon a layer of brick or a bed of sand four inches thick with legs resting on brick, and shall not be set within five feet of any woodwork, and shall be protected with a sheet-iron pan underneath projecting at least six inches beyond the sides of the heater.

Brick Set Boilers—10 H. P. Portable Boilers

Sec. 164. No brick set boiler for the generation of hot water, or steam for heating or power, or any portable power boiler or engine over ten horse power, shall be placed on any wood or combustible beam or floor.

Portable Boilers—Installation—Ash Pans—Ash Pans in Front—Wood Ceilings and Beams Protected—Combustible Partitions Protected.

Sec. 165. Wood or combustible floor and beams under and not less than three feet in front and one foot on the sides of all portable boilers shall be protected by a suitable brick foundation of not less than two courses of brick well laid in mortar on sheet iron and asbestos board; the said sheet iron and asbestos shall extend at least twenty-four inches outside of the foundation at the sides and front. Bearing lines of brick, laid on flat with air spaces between them, shall be placed on the foundation to support a cast iron ash pan of suitable thickness, on which the base of the boiler shall be placed, and shall have a flange turned up in the front and on the sides, four inches high. Said pan be in width not less than the base of the boiler, and shall extend at least two feet in front of it.

If a boiler is supported on a cast iron base, with the bottom of required thickness for an ash pan, and is placed on bearing lines of brick in the same manner as specified for an ash pan, then an ash pan shall be placed in front of the said base and shall not be required to extend under it.

All wood ceilings and beams over and up to a distance of not less than four feet in front of all boilers shall be shielded with plaster or metal. The distance from the top of the boiler to said shield shall be not less than twelve inches.

No combustible partition shall be within four feet of the sides and back and six feet from the front of any boiler, unless said partition shall be covered with metal over asbestos to the height of at least three feet above the floor, and shall extend from the end or back of the boiler to at least five feet in front of it; then the distance shall be not less than two feet from the sides and five feet from the front of the boiler.

High Pressure Boilers Located Where

Sec. 166. No boiler for the generation of more than ten horse power shall be placed in any frame building. Boilers of more than ten and less than seventy-five horse power shall not be located within eight feet of any frame building; if more than seventy-five and less than 250 horse power, they shall be at least twenty feet distant from any frame building, and if of greater capacity than 250 horse power, they shall not be less than thirty feet distant.

Boiler and Fuel Rooms Where Located—Openings—Boiler and Fuel Rooms in Buildings

Sec. 167. Boiler and fuel rooms and smoke houses, which may hereafter be constructed, shall be located not less than eight feet distant from any other building and shall be built throughout of incombustible material. All the openings to such boiler and fuel rooms and smoke houses, if same are located within thirty feet of any other building, shall have

shutters and doors of metal, or wood covered with metal on both sides and edges.

Boiler and fuel rooms, when constructed in buildings, shall be separately inclosed in brick walls so arranged that all openings between them and other parts of the building will be securely closed with fire doors at the end of each day's work.

Boiler Rooms, etc., Not Provided for in Code Board to Prescribe

Sec. 168. If any question should arise relating to boiler rooms, fuel rooms, and rooms containing gas or gasoline engines, for which there is no provision in this Code, the Building Inspector shall have full power to act, and his decision in the matter shall be of the same effect as if contained in this Code.

Brick Set Hot Air Furnaces—Covers—Walls

Sec. 169. All brick set hot air furnaces shall have two covers, with an air space of at least four inches between them; the inner cover of the hot air chamber shall be either a brick arch or two courses of brick laid on galvanized iron or tin, supported on iron bars; the outside cover, which is the top of the furnace, shall be made of brick or metal supported on iron bars, and so constructed as to be perfectly tight, and shall be not less than twelve inches below any combustible ceiling or floor beams.

The walls of the furnace shall be built hollow in the following manner; one inner and one outer wall, each four inches in thickness, properly bonded together, with an air space of not less than two inches between them.

Portable Hot Air Furnaces—Installation

Sec. 170. All portable hot air furnaces shall have a double cased jacket of not less than No. 26 iron from the base to the top of casting, with an air space of at least one inch between, and shall be placed at least two feet from any wood or combustible partition or ceiling, unless the partitions and ceilings are properly protected by a metal shield, when the distance shall not be less than one foot.

Wood Floors Protected

Wood floors under all portable furnaces shall be protected by two courses of brick work well laid in mortar on sheet iron. Said brick work shall extend at least two feet beyond the furnace in front of the ash pan and lower course bricks shall be spaced so as to allow ventilation.

Cold Air Boxes—Construction

Sec. 171. The cold air boxes of all hot air furnaces shall be made of metal, brick, or other incombustible material, for a distance at least ten feet from the furnace, and shall be so constructed as to be kept free from dust.

Changes in Heating Appliances

Sec. 172. In cases where hot water, steam, hot air, or other heating appliances or furnaces are hereafter placed in any building, or flues or fireplaces are changed or enlarged, due notice shall first be given to the Building Inspector by the person or persons placing the said furnace or furnaces in said building, or by the contractor or superintendent of said work.

Kitchen Range — Wood to be Protected—Ranges on Combustible Floors—Wood Ceilings Guarded—Ventilating Hood Over Ranges

Sec. 173. Where a kitchen range is placed within six inches of a wood wainscot or wood partition, the said wood-work should be shielded with metal from the floor to the height of not less than two feet higher than the range.

All ranges on wood or combustible floors and beams that are not supported on legs and have ash pans three inches or more above their base, shall be set on zinc or brick or cement foundations.

No range shall be placed against a furred wall.

All wood ceilings over all large ranges, and ranges in hotels and restaurants, shall be guarded by metal hoods placed at least nine inches below the ceiling.

A ventilating pipe connected with a hood over a range shall be at least nine inches from all lath and plaster or woodwork and shielded. If the pipe is less than nine inches from lath and plaster and woodwork, then the pipe shall be covered with one-half inch of asbestos plaster or other incombustible covering. No ventilating pipe connected with a hood over a range shall pass through any floor unless protected.

Laundry Stoves—Installation

Sec. 174. Laundry stoves on wood or combustible floors shall have zinc or a course of brick, laid on metal on the floor under and extended twenty-four inches on all sides of them. All stoves for cooking and heating purposes, shall be properly supported on iron legs resting on the floor one foot from all lath and plaster or two feet from woodwork; if the lath and plaster or woodwork is properly protected by a metal shield then the distance shall be not less than one foot. A metal shield shall be placed under and twelve inches in front of the ash pan of all stoves that are placed on wood floors.

Low Gas Stoves—Open Gas Stoves—Gas Burners Prohibited When—Vent Pipes

Sec. 175. All low gas stoves shall be placed on iron stands, or the burners shall be at least six inches above the base of the stove, and metal guard plates placed four inches below the burners, and all woodwork under them shall be covered with metal. Open gas stoves shall be isolated in the same manner as provided for stoves; if properly air insulated within themselves, shall be placed two feet distant from all unprotected woodwork, or one-foot from plastered stud partitions.

The use of gas burners or heaters, located in a floor-system under an open register, or on the outside of the firepot of any hot air furnace, in which the products of combustion are allowed to escape into a room, is hereby prohibited, and all such burners or heaters so located shall be removed within forty days after the passage of this Code.

Gas Log, Grate, Etc.

Sec. 176. No gas log, gas grate, or other fireplace heater shall be installed in any building except in a brick fireplace connected with a chimney flue, unless in the opinion of the Building Inspector a fireplace and flue are unnecessary.

Core and Annealing Ovens—Installation.

Sec. 177. All core and annealing ovens, or any portable smelting furnaces, shall be set on incombustible hearths with an air space of at least five inches between hearths and the bottom of such ovens or furnaces. The construction of hearths and protection of surrounding woodwork shall be the same as prescribed for portable boilers, or hot air furnaces.

CHAPTER IX.

STOVE AND SMOKE PIPES.

Stove and Smoke Pipes Nine Inches From Woodwork

Sec. 178. No stove or smoke pipe or any pipe conducting the products of combustion from any range, oven, or heater shall be concealed in any wood partition or be placed nearer than nine inches to an unprotected lath and plaster or board partition, ceiling, or any woodwork.

Large Smoke Pipes Twenty Inches From Woodwork—Extra Large Smoke Pipes Three Feet From Woodwork

Sec. 179. Smoke pipes of greater diameter than twelve inches and less area than six square feet, must be at least twenty inches from any woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than twelve inches.

Smoke pipes of larger area than six square feet shall be kept at least three feet distant from any woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than eighteen inches.

Metal Shields—Size.

Sec. 180. The metal shields prescribed in the previous section shall be at least twice the diameter of the pipe in width and shall have a ven-

tilated air space of at least one inch between shield and woodwork.

Sec. 181. No wood casing, furring, or lath shall be placed against or cover any smoke flue or metal pipe used to convey hot air or steam.

No Wood Around Flues, etc.—Smoke Pipes of Large Stoves

Sec. 182. Smoke pipes of large laundry stoves, large cooking ranges, and of furnaces shall not be less than fifteen inches from any woodwork, unless they are properly guarded by metal shields; if so guarded such pipes shall be not less than nine inches distant.

Smoke Pipes Through Roofs—Roof Protected—Thimble

Sec. 183. No smoke pipe shall pass through the wooden roof of any building unless a special permit be first obtained from the Building Inspector for the same. If a permit is so granted, then the roof through which the smoke pipe passes shall be protected in the following manner: A galvanized iron ventilated thimble of the following dimensions shall be placed: in case of a stove pipe, the diameter of the outside guard shall be not less than twelve inches, and the diameter of the inner guard eight inches larger than the smoke pipe, and for all furnaces, or where similar large hot fires are used, the diameter of the outside guard shall be not less than eighteen inches and the diameter of the inner one, twelve inches larger in diameter than pipe. The smoke pipe thimbles shall extend from the under side of the ceiling or roof beams to at least nine inches above the roof, and they shall have openings for ventilation at the top of the guards above the roof.

Where a smoke pipe of a boiler passes through a wooden roof, the same shall be guarded by a ventilated thimble same as before specified, thirty-six inches larger than the diameter of the smoke pipe of the boiler.

Smoke Pipe Through Wood Partitions—Smoke Pipes Connected With Flue

Sec. 184. Where smoke pipes pass through a wood or plastered partition, or furred wall, or floor, they shall be surrounded either by a body of hard, incombustible material, measuring at least four inches all around such smoke pipe, or they shall be surrounded by a double safety thimble of sheet metal made of two concentric rings of sheet metal at least one inch apart, and the entire thimble so constructed that there will be a circulation of air beween the two rings forming same.

No smoke pipe shall project through an external wall unless connected with a chimney or metal stack carried above the roof.

Pipes For Hot Air—Construction

Sec. 185. Where pipes are used for the distribution of hot air from hot air furnaces in buildings, such pipes must be made of metal and double, the space betweeen the two metal pipes shall be at least three-eighths inch; such pipes shall be made with air tight joints and be securely fastened to the partitions through which they pass or in lieu thereof the pipes may be covered with asbestos paper, weighing not less than fourteen pounds per one hundred square feet, thoroughly pasted to pipes and also wired every two feet with copper wire, and the studs and other woodwork within one inch of the pipe shall be lined with bright tin, and the pipes shall be covered with metal lathing or plaster board.

Openings For Registers

Sec. 186. The openings in floors for hot air registers shall be surrounded with borders of incombustible material, not less than two inches wide, firmly and securely set in place. The register boxes shall be double, the distance between the two thicknesses of tin being at least one inch, or they can be single if covered with asbestos paper and woodwork lined with tin in a similar manner to that specified in the paragraph for the pipes.

CHAPTER X.

CHIMNEYS, FLUES, AND FIRE-PLACES.

Foundations—How Built

Sec. 187. The foundations of chimneys, flues and stacks, whether inside or outside of buildings, or whether connected with the same or isolated, shall be designed and built in conformity with the provisions relating to foundations of buildings.

Chimney Construction

Sec. 188. All chimneys shall be built of brick, stone, or other fireproof material. The exterior walls of chimneys shall be at least four inches thick and constructed with a suitable flue lining of terra cotta, or eight inch walls without lining may be used.

Chimneys Corbeled

Sec. 189. No chimney or fire place shall be corbeled from a wall more than four inches, or be hung from a wall less than twelve inches thick unless it projects equally on each side of the wall; nor shall a chimney or fire place rest upon any wooden floor or beam.

Walls of Chimneys—Piers of Chimneys—Chimneys Cut Off

Sec. 190. The walls of all chimneys shall rest upon footings at or below the level of the ground, or upon a continuous support of masonry or metal extending to footing as above stated; provided, however, that on written permission of the Building Inspector, chimneys may be built upon a footing or flooring of masonry or concrete supported by iron beams which have secure bearings on masonry, iron, or steel at both ends.

Where chimneys are supported by piers, the piers shall start from the foundation.

When a chimney is to be cut off below, in whole or in part, it shall be wholly supported by stone, brick, iron, or steel.

Dangerous Chimneys

Sec. 191. All chimneys which shall be dangerous in any manner whatever, shall be repaired and made safe, or taken down.

Smoke Flues Size

Sec. 192. No smoke flue shall be less than eight inches by eight inches.

All smoke flues shall be proportioned to the volume of gases to pass through the same.

Flue Connections Limited

Sec. 193. Not more than two stoves or two furnaces shall be connected with an eight inch by eight inch flue, nor more than four stoves or three furnaces with an eight inch by twelve inch flue.

Smoke Pipes Entering Flues

Sec. 194. Where smoke pipes enter flues, the brick work must be corbeled out to the face of the studs; the part thus corbeled out shall not be less than sixteen inches by sixteen inches, but in no case shall such corbeling exceed the thickness of the wall.

Terra Cotta Crocks

Sec. 195. Terra cotta crocks shall be inserted for receiving all smoke pipes.

Chimney Tops Above Roofs

Sec. 196. Tops of chimneys shall extend at least three feet above flat roofs, and as high as the main ridge or pitched roofs, except that chimneys at or near the ridge shall extend to at least two feet above the ridge.

Fireplaces and Chimneys to Have Joints Smooth or Lined

Sec. 197. All fireplaces and chimneys in stone or brick walls in any building hereafter erected, except as herein otherwise provided, and any chimney, or flue hereafter altered or repaired, without reference to the purpose for which they may be used, shall have the joints struck smooth on the inside, except when lined on the inside with well-burnt clay or terra cotta pipe.

Size of Fireplaces

Sec. 198. All fireplaces shall be at least twenty-four inches wide, and the hearth shall extend at least twelve inches beyond the opening on each side, and at least eighteen inches in front.

Fireplace Fire Backs

Sec. 199. The fire backs of all

fire places hereafter erected shall be not less than eight inches in thickness of solid brickwork, nor less than twelve inches if of stone.

Grate in Fireplace

Sec. 200. When a grate is set in a fireplace, a lining of fire brick, at least two inches in thickness, shall be added to the fireback, unless soap stone, tile, or cast iron is used.

Walls of High Pressure Boiler Flues

Sec. 201. The walls of all high pressure boiler flues shall be not less than twelve inches thick, and the inside four inches of such walls shall be fire brick, laid in fire mortar, for a distance of twenty-five feet from the source of heat.

Double Walls For Smoke Flues—When

Sec. 202. All smoke flues of smelting furnaces or of steam boilers, or other apparatus which heat the flues to a very high temperature, shall be built with double walls of suitable thickness with an air space between the walls; the inside four inches of the flues shall be of fire brick, laid in fire mortar, for a distance of not less than twenty-five feet from the source of heat.

Smoke Flues For Existing Buildings

Sec. 203. For any now existing brick building, where it becomes necessary to provide a smoke flue of larger size than any flue within the building, such flue may be placed on the outside of the building, and be made round in shape and of sheet metal not less than one-eighth of an inch in thickness, properly riveted together at all joints, and carried up to a height not less than ten feet above the roof, and be properly braced at intervals for its entire length, with flat iron bands secured with expansion bolts to the wall, leaving a free air space of not less than four inches between the outside of the metal flue and the brick wall of the building, and have a clean-out door at the bottom. This metal flue shall rest on a suitable cast iron plate at the bottom, supported on a suitable foundation of masonry.

Iron Cupola Chimneys

Sec. 204. Iron cupola chimneys of foundries shall extend at least ten feet above the highest point of any roof within a radius of fifty feet of such cupola, and be covered on top with a heavy wire netting, and capped with a suitable spark arrester.

No woodwork shall be placed within two feet of the cupola.

Trimmer Arches For Fireplaces—Size—Length—Wood Centers Removed

Sec. 205. All fireplaces and chimney breasts whether intended for ordinary fireplace uses or not, shall have trimmer arches to support hearths, and no woodwork shall be used under such arches.

The said arches shall be at least eighteen inches in width, measured from the face of the chimney breast, and they shall be constructed of brick, stone, burnt-clay, or concrete.

The length of a trimmer arch shall be not less than the width of the chimney breast.

Wood centers under trimmer arches shall be removed before plastering the ceiling underneath.

Heaters in Fireplaces

Sec. 206. If a heater is placed in a fireplace, then the hearth shall be six inches wider than the full width of the heater.

All fireplaces in which heaters are placed shall have incombustible mantels.

Sec. 207. No wood mantel or other woodwork shall be exposed back of a summer piece; the iron work of the summer piece shall be placed against the brick or stone work of the fireplace.

Summer Pieces

Sec. 208. No fireplace shall be closed with a wood fire board.

CHAPTER XI.

FRAME BUILDINGS.

Definition

Sec. 209. A frame building shall be taken to mean a building or structure of which the exterior walls shall be constructed of wood. Buildings sheathed with board and partially or entirely veneered on the

outside with four inches of brick work or other masonry shall be deemed frame buildings. Wood frames covered with metal shall be deemed frame buildings.

Location on Lot

Sec. 210. Frame buildings shall be located or built not less than two feet from the side lines of the lot upon which the same is located, when such building is one story in height; and at least three feet from said lot lines for buildings two stories in height, and at least four feet from said lot lines for buildings three stories in height.

Height

Sec. 211. No frame building shall be hereafter erected or altered over three stories in height, or to be occupied by more than four families. But nothing herein shall be taken to prevent the construction of blocks of frame buildings separated by fire walls as specified in this Code.

Middle Posts Required When

Sec. 212. In all frame buildings that exceed twenty-four feet in depth, there shall be a middle post on each side four inches by six inches in one continuous length, and if buildings exceed twenty feet in width, there shall also be a post the same as above.

Structural Members

Sec. 213. All beams, girders, columns, trusses, and other structural members shall be proportioned of sufficient strength to sustain the load to be supported. In all cases suitable provisions shall be made to take up and properly distribute the stresses due to concentrated or eccentric loading, and also to prevent danger from horizontal or vertical deflection or the buckling or shear of the members.

Fire Stops

Sec. 214. The space between the studs on the top of first floor joists of outside and inside walls of all frame buildings shall be closed with two inch fire stops, shutting off all spaces. On all the other floors of frame buildings constructed with a board girt, the spaces on the under side and also on top of joists shall be filled with a fire stop not less than two inches thick, securely fastened and properly fitted to fill voids between outside studding.

Woodbeams in Buildings of Incombustible Construction

Sec. 215. All wood beams and other timbers in any wall of a building built of stone, brick, concrete, or iron, shall be separated from the beam or timber entering in the opposite side of the wall by at least four inches of solid mason work; such separation may be obtained by corbeling or by staggering the beams.

Beams and Timbers Cut For Pipes—Carpenter to Direct Cutting

Sec. 216. No beams or other timbers shall be cut for pipes or tubes in any manner which shall impair the strength of the timbers; and in no case shall they be cut further from the bearings than twice the depth of the timber. When studs are cut more than one-third their depth, they shall be reinforced. All cutting shall be done by or under the direction of the carpenter. Joints shall be bored near the middle for pipes, when it is impossible to place them as above provided.

Drawings and Strain Sheets When Furnished

Sec. 217. Drawings of all trusses and special or unusual framing sizes of members, shall be submitted with plans and specifications to the Building Inspector if requested and, when required by Building Inspector, a strain sheet showing stresses in truss members shall also be submitted.

Interior Studding

Sec. 218. All interior studding shall be but one story in height, set on caps or soles, except where partitions are over girders; the studding shall be seated on the girders and have caps not less than three inches thick with two inch fire stops at each story.

Wood Trimmer and Header Beams

Sec. 219. All wood trimmed and header beams shall be proportioned to carry with safety the loads they are intended to sustain.

Ends of Tail Beams—Beams Bevelled Back

Sec. 220. The ends of all tail beams shall be properly framed or thoroughly spiked into the header beams.

The ends of all beams buried in masonry walls shall be bevelled back not less than three inches

Joist Hangers—Walls Anchored

Sec. 221. In all eight inch division walls, joists shall not rest in the wall, but shall be supported upon approved joist hangers, unless the wall is corbeled so as to keep the ends of joists four inches apart.

Walls shall be anchored to ends of joists every five or six feet by wrought iron anchors not less than one-quarter of an inch by one and one-half an inch, and not less than sixteen inches long.

Walls running parallel to joists shall be anchored by similar anchors extending over two joists.

Wall Plates

Sec. 222. Wall plates shall be anchored to walls every five or six feet.

Woodwork 1 Inch From Chimney

Sec. 223. No timber or other woodwork shall be placed within one inch of the outside of the wall of any chimney or flue.

Girder Ends Air Space

Sec. 224. The ends of girders buried in walls shall have an air space around them.

Wood Floor and Roof Beams Bridged

Sec. 225. All wood floor and wood roof beams shall be properly bridged with cross bridging, and the distance between bridging or between bridging and walls shall not exceed eight feet.

No Wood Posts in Cellars

Sec. 226. Wood posts will not be allowed in cellars of any buildings over two stories in height.

Sills

Sec. 227. Sills in frame buildings shall not be less than four inches by six inches.

Girders

Sec. 228. Girders shall not be less than six inches by six inches and shall be of sufficient strength to carry the superimposed load.

Temporary 1-Story Building

Sec. 229. Temporary one-story frame buildings may be erected for the uses of builders, within the limit of lots whereon buildings are in course of erection, or on adjoining vacant lots without a permit by Building Inspector.

Temporary structures shall also include platforms, stands, election booths, and tents.

Sheds

Sec. 230. Sheds of wood not over fifteen feet high, open on at least one side, may also be built, but a fence shall not be used as the back or side thereof.

Such sheds may be built in isolated localities under such conditions as the Building Inspector may prescribe.

Fences

Sec. 231. Fences of wood shall not be erected over ten feet high, above the surface of the ground, and shall be properly supported and braced.

Signs

Sec. 232. Signs of wood shall not be erected over two feet high on any building, but no sign of wood shall be placed above the front wall or cornice or roof of any building.

Sky Signs

Sec. 233. Sky signs, or any device in the nature of an advertisement, announcement, or direction, constructed of sheet metal or wire fastened to wood frames supported upon or above or attached to any building shall be deemed to be wood signs.

Metal When Required

If such sky signs shall exceed two feet in height, they shall be constructed entirely of metal, including the uprights, supports, and braces for same, and shall not be more than nine feet in height above the front wall or cornice or roof of the building or structure to which they are attached or by which they are supported.

Permit For Signs

Sec. 234. Before any wood or

metal sign shall be placed in position upon, above or attached to the outside of any building, a permit shall first be obtained from the Building Inspector. Such signs shall be so constructed, placed, and supported as not to be or become dangerous.

MILL CONSTRUCTION.

Definition

Sec. 235. That form of construction in which heavy posts and girders with wide spacing support floors and roof of heavy planking.

Size of Timbers

Sec. 236. In mill construction, no timber shall be less than six inches in either of its cross dimensions.

Floor and roof planking of more than five feet spans shall not be less than one and three-quarter inches in thickness.

Caps For Wood Posts

Sec. 237. Wood posts shall have iron or steel caps and bases with pintle connections, or steel or iron box caps with projections for receiving ends of girders made so that girders shall be self releasing.

CHAPTER XII.

PUBLIC BUILDINGS, THEATRES, AND PLACES OF ASSEMBLAGE.

General Statement

Sec. 238. In all public buildings, or buildings of a public character, such as hotels, churches, theatres, restaurants, railroad depots, public halls, and other buildings used or intended to be used for purposes of public assemblage, amusement, or instruction where large numbers of people are congregated, the halls, doors, stairways, seats, passageways and aisles, and all lighting and heating appliances and apparatus shall be arranged as the Building Inspector shall direct to facilitate egress in cases of fire or accident, and to afford the requisite and proper accommodation for the public protection in all such cases.

Aisles to be Unobstructed

Sec. 239 All aisle and passageways in said buildings shall be kept free from camp-stools, chairs, benches, and other obstructions, and no person other than an employe or policeman or fireman shall be allowed to stand in or occupy any of said aisles or passageways, during any performance, service, exhibition, lecture, concert, ball, or any public assemblage.

Inspector May Make Orders.

Sec. 240. The Building Inspector may at any time serve a written or printed notice upon the owner, lessee, or manager of any of said buildings, directing any act or thing to be done or provided in or about the said buildings and the several appliances therewith connected such as halls, doors, stairs, windows, seats, aisles, fire-walls, fire apparatus, and fire-escapes as he may deem necessary.

Sec. 241. Nothing herein contained shall be construed to authorize or require any other alterations to theatres existing prior to the date of this Code than are specified in this chapter.

Buildings Subject to Provisions

Sec. 242. Every theatre or opera-house, or other building intended to be used for theatrical or entertainment purposes, or for public resort or entertainments of any kind, hereafter erected, shall be built to comply with the requirements of the Building Code recommended by the National Board of Fire Underwriters, New York, fourth edition and revised 1915, and which is hereby made part of this code.

Staircase

Sec. 243. The staircase from the upper balcony to the next below shall be not less than thirty inches in width in the clear, and from the first balcony to the ground, three feet in width in the clear, where the seating capacity of the auditorium is for one thousand people or less, three feet six inches in the clear where exceeding one thousand and not more than eighteen hundred, four feet in the clear where exceeding eighteen hundred people.

Number of Exits

Sec. 244. Every theatre or public building accommodating three hundred persons shall have at least two exits; where accommodating five hundred persons, at least three exits

shall be provided.

Doorways—Width

Sec. 245. Doorways of exit or entrance for the use of the public shall be not less than five feet in width, not including the fire exit doorways, and for every additional one hundred persons or fraction thereof in excess of five hundred, to be accommodated, an aggregate of twenty inches additional exit width must be provided.

Doors Open Outwardly

All doors of exit or entrance shall open outwardly and be hung to swing in such a manner as not to become an obstruction in a passage or corridor, and no such door shall be closed or locked when the building is open to the public.

CHAPTER XIII.

CONCRETE BLOCKS.

Use of Concrete Blocks

Sec. 246. Hollow concrete building blocks may be used for buildings five stories or less in height where said use is approved by the Building Inspector; provided, however, that such blocks shall be composed of at least one part of standard Portland cement, and not to exceed five parts of clean, coarse, sharp sand or gravel, or a mixture of at least one part of Portland cement to five parts of crushed rock or other suitable aggregate. Provided, further, that this section shall not permit the use of hollow blocks in party walls. Said party walls must be built solid.

Material

Sec. 247. All material shall be of such fineness as to pass a one-half inch ring and be free from dirt or foreign matter. The material composing such blocks shall be properly mixed and manipulated, and the hollow space in said blocks shall not exceed the percentage given in the following table for different height walls, and in no case shall the walls or webs of the block be less in thickness than one-fourth of the height. The figures given in the table represent the percentage of such hollow space for different height walls.

Stories	1st	2nd	3rd	4th	5th
3 and 4....	25	33	33	33	
1 and 2....	33	33			
5	20	25	25	33	33

Thickness of Walls

Sec. 248. The thickness of walls for any building where hollow concrete blocks are used shall not be less than is required by this Code of brick walls.

Hollow Block Facing Bonded to Backing

Sec. 249. Where the face only is of hollow concrete building blocks, and the backing is of brick, the facing of hollow concrete blocks must be strongly bonded to the brick either with headers projecting four inches into the brick work, every fourth course being a heading course, or with approved ties; no brick backing shall be less than eight inches. Where the walls are made entirely of hollow concrete blocks, but where said blocks have not the same width as the wall, every fifth course shall extend through the wall forming a secure bond. All walls, where blocks are used, shall be laid up in Portland cement mortar; two parts sand, one part Portland cement.

Age Before Using

Sec. 250. All hollow concrete building blocks, before being used in the construction of any building in the Town of Milford, shall have attained the age of at least four weeks, or one week, if steam cured at least thirty-six hours.

Blocks Made Solid When

Sec. 251. Wherever girders or joists rest upon walls so that there is a concentrated load on the block of over one ton, the blocks supporting the girder or joists must be made solid. Where such concentrated load shall exceed three tons, the blocks for two courses below and for a distance extending at least eighteen inches each side of said girder, shall be made solid. Where the load on the wall from the girder exceeds five tons, the blocks for three courses beneath it shall be made solid with similar material as in the blocks. Wherever walls are

decreased in thickness, the top course of the thicker shall be solid.

Loads on Hollow Blocks

Sec. 252. Provided, always, that no wall, or any part thereof, composed of hollow concrete blocks, shall be loaded to an excess of eight tons per superficial foot of the area of such blocks, including the weight of the wall, and no blocks shall be used that have an average crushing strength of less than one thousand pounds per square inch of area at the age of twenty-eight days; no deduction shall be made in figuring the area for the hollow spaces.

Piers Solid When

Sec. 253. All piers and buttresses that support loads in excess of five tons, shall be built of solid concrete blocks for such distance below as may be required by the Building Inspector. Concrete lintels and sills shall be reinforced by iron or steel rods in a manner satisfactory to the Building Inspector, and any lintels spanning over four feet six inches in the clear shall rest on solid concrete blocks.

Blocks to be Tested

Sec. 254. Provided, that no hollow concrete building blocks shall be used in the construction of any building in the Town of Milford unless the maker of said blocks has submitted the product to the full test required by the Building Inspector and placed on file with said Building Inspector a certificate from a reliable testing laboratory showing that samples from the lot of blocks to be used have successfully passed the requirements of the Building Inspector, and filing a full copy of the test with the Board.

Inspector May Require Tests

Sec. 255. The manufacturer and user of any such hollow concrete blocks, as are mentioned in this regulation, or either of them shall, at any and all times, have made such tests of the cements used in making such blocks, or such further tests of the completed blocks, or of each of these, at their own expense, and under the supervision of the Building Inspector as he shall require.

Portland Cement Used

Sec. 256. The cement used in making said blocks shall be Portland cement, and must be capable of passing the minimum requirements as set forth in the "Standard Specifications for Cement" by the American Society for Testing Materials.

Regulations Apply to New Materials

Sec. 257. These regulations shall apply to all such new materials as are used in building construction, in the same manner and for the same purposes, as stone, brick and concrete are now authorized by the Building Laws, when said new material to be substituted departs from the general shape and dimensions of ordinary building brick, and more particularly to that form of building material known as "Hollow Concrete Block" manufactured from cement and a certain addition of sand, crushed stone, or similar material.

Applications for Use of New Materials

Sec. 258. Before any such material is used in buildings, an application for its use and for a test of the same must be filed with the Building Inspector. A description of the material and a brief outline of its manufacture and proportions of the materials used must be embodied in the application.

Kinds of Tests

Sec. 259. The material must be subjected to the following tests: Transverse, Compression, Absorption, Freezing, and Fire. Additional tests may be called for when, in the judgment of the Building Inspector, the same may be necessary. All such tests must be made in some laboratory of recognized standing under the supervision of the Building Inspector. The tests will be made at the expense of the applicant.

Result of Tests Filed

Sec. 260. The results of the tests, whether satisfactory or not, must be filed with the Building Inspector. They shall be open to inspection upon application to the Building Inspector.

Number of Samples for Tests

Sec. 261. For the purposes of the

tests, at least twenty samples or test pieces must be provided. Such samples must represent the ordinary commercial product. They may be selected from the stock by the Building Inspector or his representative, or may be made in his presence, at his discretion. The samples must be of the regular size and shape used in construction.

In cases where the material is made and used in special shapes and forms, too heavy for testing in the ordinary machines, smaller sized specimens shall be used as may be directed by the Building Inspector, to determine the physical characteristic specified in this chapter.

When Tested

Sec. 262. The samples may be tested as soon as desired by the applicant, but in no case later than sixty days after manufacture.

CHAPTER XIV.

PLUMBING.

License—Bond to Be Filed—License Fee

Sec. 263. Any person, persons or corporation desiring to engage in the business of plumbing as a master plumber, or master plumbers, before receiving a license to do so, shall file in the office of the Building Inspector, a petition in writing, giving the name of the person, persons, firm or corporation, and the place of business of said person, persons, firm or corporation petitioning to become a licensed master plumber or master plumbers, and agreeing that he or they will abide by the rules and regulations of the Building Inspector and the town ordinance. Before receiving a license the applicant shall execute and deposit in the office of the Building Inspector, a good and sufficient bond payable to the Town of Milford, to be approved by said Building Inspector, in the sum of $1,000 conditioned that said applicant will indemnify and save harmless the Town of Milford and the Building Inspector of and from all accidents or damages caused by him or them in any work done by virtue of his or their said license. Said petition shall be accompanied by a license fee of ten dollars, to be paid into the treasury of the Town of Milford, whereupon said Building Inspector shall issue to said applicant a license to engage in the business of master plumber or master plumbers.

Definitions

Sec. 264. The following terms shall have the meanings respectively assigned to them:

Repair of Leaks shall mean such repairs as are necessary to protect property, but do not involve any change in construction.

Y Branches shall mean a branch of sufficient angle to direct the flow and prevent backing up.

Air Pipes or Back Air Pipes shall mean air pipes from traps that extend toward the main soil pipe or the outer air and connect with not more than three traps.

Vent Pipes shall mean general lines of back air pipes connecting with more than three fixtures.

Drain shall mean that part of the drainage system of a building extending through basement or cellar to sewer.

Soil Pipe shall mean that part of the drainage system of a building, of four inches or more internal diameter, between basement or cellar and the highest fixture in the building.

Ventilation Pipe shall mean the extension of the soil pipe from the highest fixture to and through the roof.

Surface Drain shall mean a connection with drain in the basement to allow egress of surface water or overflow.

Fixture shall mean any receptacle or outlet placed for the purpose of disposing of waste water or other matter and connecting with the waste, soil, or drain pipe of a building.

Permits Obtained When

Sec. 265. Every plumber, before doing any work in any building, shall, except in the case of repair of leaks, file in the office of the Building Inspector, upon blanks for that purpose, an application for a permit,

and a plan or sketch of the work to be performed; and no such work shall be done in any building without a written permit from the Building Inspector.

Sewer Connection—Cesspools

Sec. 266. The plumbing of every building shall be separately and independently connected outside the building with the public sewer, if such sewer is provided, or with a proper and sufficient private drain or sewer laid outside of the building, and if a sewer is not accessible, with a proper cesspool or sewer disposal plant. Several buildings may have a common sewer connection if such connection is approved by the Building Inspector.

No cesspool or disposal plant shall be placed nearer than 15 feet to any residence.

Pipes Inspected Before Covered—Tests

Sec. 267. Pipes or fixtures shall not be covered or concealed from view until approved by the Building Inspector, who shall examine or test the same within two working days after notice that they are ready for inspection. Plumbing shall not be used unless when roughed in, the waste, vents, and back air pipes, and traps are first tested by water or sufficient air pressure in the presence of an inspector, when such testing is practicable.

After all fixtures are connected and in place the entire system shall be tested in the presence of the Building Inspector or his representative, by the peppermint test, smoke test or other method approved by the Building Inspector.

Waste Pipes to Have Separate Trap—Pipe Connections

Sec. 268. The waste pipe of every independent sink, basin, bath-tub, water-closet, slop hopper, urinal, or other fixture shall be furnished with a separate trap, which shall be placed as near as practicable to the fixture which it serves.

All connections on lead waste and back air pipes and of lead pipes to brass ferrules and soldering nipples shall be full size wiped soldered branch, round or flange joints. Soil and waste pipes shall have proper "T-Y" or "Y" branches for all fixture connections. No connections to lead bends for water-closets or slop sinks shall be permitted, except the required back air pipe where a continuous vent is not practicable.

Earthenware Traps

Sec. 269. All earthenware traps must have heavy brass floor plates, soldered to the lead bends, or, where brass or iron pipes are used, to be screwed to the same and bolted to the trap flange, and the joint to be made gas tight without the use of red or white lead or any similar substance or rubber washers, the use of which, in the making of said connections, is hereby prohibited, and no device for such connections will be permitted to be used unless it has been approved by the Building Inspector.

Traps Protected From Syphonage—Air Pipes For Waterclosets—Size of Air Pipes

Sec. 270. Traps shall be protected from syphonage or air pressure by lead, galvanized iron, or brass air pipes of a size not less than one and one-half inches for traps of two inches or less, and two inches for traps larger than two inches, and larger. Back air pipes shall connect with the top of traps or as near the top as practicable.

Air pipes for water-closet traps shall be connected to the highest point of bend or trap, closet bends to be back-aired where there is more than one closet in the same line, and may be of two inch bore if for no more than four fixtures and less than forty feet in length; if for more than four fixtures or more than forty feet in length, they shall be of larger bore.

Air pipes shall be run as direct as practicable, and if one and one-half inches in diameter shall not exceed thirty feet in length. Two or more air pipes may be connected together or with a vent pipe; but in

every such case the connection shall be above the top of the highest fixture.

Diameters of Vent Pipes—Vent Lines

Sec. 271. Diameters of vent pipes shall not be less than two inches for main vents through less than seven stories, three inches for water-closets on more than three floors and for other fixtures in more than seven stories. All vent pipes shall be increased one inch in diameter before passing through the roof. Vent lines shall be connected at the bottom with a soil or waste pipe or with the drain, in such a manner as to prevent accumulation of rust scale and properly to drip the water of condensation. Offsets shall be made at an angle of not less than forty-five degrees.

By approval of the Building Inspector a suitable non-syphon trap may be used without back air venting pipe.

Soil Pipes Supported

Sec. 272. Soil pipes or iron waste pipes, vents and back air pipes, shall be supported by clamps to the woodwork, iron drive hooks to brick walls, or bolted clamps to iron girders.

Chemical Laboratories

Sec. 273. Fixtures and waste pipes in chemical laboratories shall be installed in accordance with plans approved by the Building Inspector.

Stable Fixtures

Sec. 274. The drainage of stable fixtures shall be constructed to plans approved by the Building Inspector

Superimposed Fixtures—Batteries

Sec. 275. In buildings where a series of bath-rooms or kitchens are located directly over each other and have a common soil or waste pipe, the back air pipe required shall be a vent line connecting with each outlet branch close to the water-closet connection or outlet from the sink trap, each branch vent to connect with the vent line above the top of the highest fixture on each floor, the vent line shall connect to main vent line above the top of the highest fixture in the building.

In the case of batteries of water-closets or other fixtures the special air pipe from each trap may be omitted, provided that the soil or waste pipe, undiminished in size, is continued without any other fixture connection to a point above the roof, or revented into the main soil pipe system above the top of the uppermost fixture.

Drip Pipes

Sec. 276. All drip or overflow pipes shall be extended to some place in open sight, and in no case shall such pipe be connected directly with the drain pipe. No waste pipe from a refrigerator or other receptacle in which provisions are stored shall be connected with a drain or other waste pipe. Refrigerator wastes connecting with two or more stories shall be supplied with a trap on the branch for each floor.

Water-Closet Water Supply

Sec. 277. Every water-closet or line of water-closets shall be supplied with water from a tank or cistern, and shall have a flushing pipe of not less than one and one-quarter inches in diameter.

Separate Water-Closets—Ventilated

Sec. 278. In every building hereafter erected, there shall be a separate water-closet for each tenement of three rooms or more, and at least one water-closet for every two tenements of less than three rooms, fifteen persons living, occupying, or employed therein; said water-closets shall be located in well ventilated rooms with a suitable window opening into the outer air, or with a suitable ventilating shaft.

Sec. 279. Water-closets, sinks, or basins shall not be inclosed.

Sec. 280. Sinks and laundry-tubs shall be made of non-absorbent material.

Diameters of Soil and Waste Pipe

Sec. 281. The diameters of soil and waste pipes shall be not less than those given in the following table:

	Inches
Soil pipes	4
Main waste pipes, except as otherwise specified	2

Main waste pipes for kitchen sinks on four or more floors	3
Branch waste pipes for laundry tubs	1½
Branch waste for kitchen sinks	1½
Branch waste for urinals	1½
No branch waste for other fixtures shall be less than	1½

With the approval of the Building Inspector a three inch soil pipe may be used for one water-closet where it is not practicable to use a four-inch pipe.

Sec. 282. Brass ferrules shall be of the best quality, bell-shaped, extra heavy cast brass, not less than four inches long and two and one-quarter inches, three and one-half inches, and four and one-half inches in diameter, and of not less than the following weights:

Diameters	Weights
2½ inches	1 pound, 0 ounces
3½ inches	1 pound, 12 ounces
4½ inches	2 pounds, 8 ounces

One and one-half inch ferrules shall not be used.

Soldering Nipples

Sec. 283. Soldering nipples shall be of heavy cast brass or of brass pipe, iron pipe size. If cast, they shall be of not less than the following weights:

1½ inches	0 pound, 8 ounces
2 inches	0 pound, 14 ounces
2½ inches	1 pound, 6 ounces
4 inches	3 pounds, 8 ounces

Clean-outs—Screw Cap

Sec. 284. Where clean-outs are used, the screw cap shall be of brass, extra heavy, and not less than one-eighth of an inch thick. The engaging parts shall have not less than six threads of iron pipe size, and shall be tapered. Clean-outs shall be of full size of trap up to four inches in diameter, and not less than four inches for larger size.

The screw cap shall have a solid square or hexagonal nut, not less than one-half inch high, with a least diameter of one and one-half inches. The bodies of brass clean-out ferrules shall be at least equal in weight and thickness to the calking ferrule for the same size of pipe.

Use of Lead Pipe

Sec. 285. The use of lead pipes is restricted to short branches of the soil and waste pipes, bends, and traps, and roof connections of inside leaders.

Lead Soil and Waste Pipe

Sec. 286. Lead soil and waste pipe shall not be less than the following average thickness and weight per linear foot:—

Diameter	Thickness	Weight per Linear Foot
1½ in.	.14 in.	3.50 pds.
2 in.	.15 in.	4.75 pds.
2½ in.	.20 in.	5.74 pds.
3 in.	.21 in.	7.54 pds.
3½ in.	.22 in.	9.00 pds.
4 in.	.23 in.	10.66 pds.
4½ in.	.24 in.	12.34 pds.
5 in.	.25 in.	14.50 pds.
6 in.	.28 in.	18.76 pds.
7 in.	.30 in.	23.27 pds.
8 in.	.32 in.	28.18 pds.
9 in.	.34 in.	33.70 pds.
10 in.	.36 in.	40.06 pds.
11 in.	.37 in.	45.02 pds.
12 in.	.37 in.	49.98 pds.

Brass Pipe

Sec. 287. Brass pipe for soil, waste, vent, and back air pipes shall be thoroughly annealed, seamless, drawn brass tubing, of not less than No. 13 Stubbs gauge.

Pipe Connections

Sec. 288. No slip joints or unions shall be used on traps, waste, vents, or back air pipes. Threaded connections on brass traps shall be of the same size as pipe threads for the same size pipe, and shall be tapered. Connections between lead and iron shall be made by brass sleeves or screw nipples wiped to the lead and calked or screwed into the iron, except on nickel or finished metal fittings where exposed.

Weights of Brass Pipes

Sec. 289. The following average thicknesses and weights for brass pipe per linear foot shall be used:—

Diameter	Thickness	Weight per Linear Foot
1½ in.	.14 in.	2.84 pds.
2 in.	.15 in.	3.82 pds.
2½ in.	.20 in.	6.08 pds.

3	in.	.21 in.	7.92 pds.
4	in.	.23 in.	11.29 pds.
4½	in.	.24 in.	13.08 pds.
5	in.	.25 in.	15.37 pds.
6	in.	.28 in.	19.88 pds.

Cast Iron Pipes

Sec. 290. Cast iron pipes shall be uncoated, sound, cylindrical, and smooth, free from cracks and other defects, of uniform thickness and of grades known to commerce as "standard" and "extra heavy." If buried under ground, they shall be coated with asphaltum or red lead.

Weights of Cast Iron Pipe

Sec. 291. Cast iron pipe, including the hub, shall weigh not less than the following average weights per linear foot:

2	in.	5 1-2 pounds
3	in.	9 1-2 pounds
4	in.	13 pounds
5	in.	17 pounds
6	in.	20 pounds
7	in. (not stock size)	27 pounds
8	in.	33 1-3 pounds
10	in.	45 pounds
12	in.	54 pounds

Joints

Sec. 292. All joints shall be made with picked oakum and molten lead run full, and be made gas tight. No cement joints or connections between iron and cement or tile pipe shall be made within two feet of any building.

Galvanized Wrought Iron Pipe

Sec. 293. Galvanized wrought iron pipe shall be of not less than the following thickness and weight per linear foot:

Diameter		Thickness	Weights per Linear Foot
1½	in.	.14 in.	2.68 pds.
2	in.	.15 in.	3.61 pds.
2½	in.	.20 in.	5.74 pds.
3	in.	.21 in.	7.54 pds.
3½	in.	.22 in.	9.00 pds.
4	in.	.23 in.	10.66 pds.
4½	in.	.24 in.	12.34 pds.
5	in.	.25 in.	14.50 pds.
6	in.	.28 in.	18.76 pds.
7	in.	.30 in.	23.27 pds.
8	in.	.32 in.	28.18 pds.
9	in.	.34 in.	33.70 pds.
10	in.	.36 in.	40.06 pds.
11	in.	.37 in.	45.02 pds.
12	in.	.37 in.	49.98 pds.

Fittings

Sec. 294. Fittings on wrought iron vent pipes shall be galvanized recessed cast iron threaded fittings. Fittings for "plumbers tubing" shall be heavy weight with sharp threads.

Fittings for waste or soil or refrigerator waste pipes of wrought iron or brass pipe shall be galvanized wrought iron, cast iron, or brass, recessed and threaded drainage fittings, with smooth interior waterway and threads tapped, so as to give uniform grade to branches of not less than one-quarter of an inch per foot.

All joints on wrought iron or brass pipe shall be screwed joints made up with red lead, and any burr formed in cutting shall be carefully reamed out.

Drain and Ventilating Pipes

Sec. 295. Drain and connecting ventilating pipes, vents, and back air pipes shall be of sufficient size and made of extra heavy cast iron pipe if under ground, and if above ground shall be made of extra heavy cast iron, galvanized wrought iron of standard weight, or if not less than No. 13 standard gauge brass pipe within the building, except that lead pipes may be used for short connections exposed to view. Cast iron drains shall extend not less than two feet from the outside face of the wall, beyond and away from the building.

Drain Pipes Supported—Fall

Sec. 296. Drain pipes above ground shall be secured by irons to walls suspended from floor timbers by strong iron hangers, or supported on brick, stone, or concrete piers. Proper man-holes shall be supplied to reach clean-outs and traps. Every drain pipe shall have a fall of not less than one-quarter inch per foot, and shall be extended from a point two feet outside the outside face of the wall, unobstructed, to and through the roof, undiminished in size, and to a height not less than two feet above the roof, and not less

than one foot above the top of any window within fifteen feet, and not less than eight feet above the roof, if the roof is used for drying clothes or as a roof garden.

Drain Pipe Branches

Sec. 297. The drain pipe shall be supplied with a "Y" branch fitted with a brass clean-out or with an iron stopper, if required, on the direct run, at or near the point where the drain leaves the building. Changes in direction shall be made with curved pipes, and all connections with horizontal or vertical pipes shall be made with "Y" branches. Saddle hubs shall not be used.

Blow-off Tanks—Cooling Tanks For Steam Pipes

Sec. 298. All high pressure steam boilers shall be connected with a blow-off tank of a capacity not less than thirty per cent. of the largest boiler connected with such tank. The location of and the connection to said blow-off tank shall be subject to the approval of the Building Inspector.

No steam exhaust or steam drip, unless it be provided with a cooling tank of a capacity approved by the Building Inspector, or unless it be connected with the blow-off tank, shall connect with any drain leading to the sewer. Every blow-off tank shall be supplied with a vapor pipe not less than two inches in diameter, which shall be carried above the roof and above the highest windows of the building.

Grease Trap—Traps For Inflammable Materials—Traps For Vehicle Washstands

Sec. 299. Every building from which grease may be discharged in such quantity as to clog or injure the sewer, shall have a special grease trap.

Every building in which gasoline, naphtha, or other inflammable compounds are used for business purposes, shall be provided with a special trap, so designed as to prevent the passage of such materia' into the sewer, and ventilated with a separate pipe rising to a point four feet above the roof.

The waste pipe of every wash stand for vehicles shall be provided with a sand trap of sufficient capacity.

Waste Pipes to Have Grease Traps When

Sec. 300. The waste pipe from the sink of every hotel, eating house, restaurant, or other public cooking establishment, shall be connected to a grease trap of sufficient size, easily accessible to open and clean, placed as near as practicable to the fixture that it serves.

Rain Water Leaders

Sec. 301. Rain water leaders which open near windows or for verandas or lower stories of buildings shall be trapped, where connected with sewer or cesspool.

Sec. 302. Rain water leaders within any building shall not be connected with any waste or soil pipe except below the lowest fixture and on a full "Y."

Back Water Valves.

Sec. 303. Wherever a surface drain is installed in a cellar or basement, it shall be provided with a deep seal trap and back water valve. Drain pipes from fixtures in cellars and basements liable to back flow from a sewer shall be supplied with back water valves.

Rain Water Leaders on All Buildings

Sec. 304. All buildings shall be kept provided with proper metallic leaders for conducting water from the roofs in such manner as shall properly protect the walls and foundations of said buildings. In no case shall the water from said leaders be allowed to flow upon the sidewalk, but the same shall be conducted by pipes to the sewer.

If there should be no sewer in the street upon which said building fronts, then water from such leaders may be conducted by suitable pipes below the surface of the sidewalk to the street gutter.

In no case shall it be allowable for the drop from roofs or buildings to flow or be conducted upon public sidewalks and no leader whose upper inlet is below the main roof shall be

connected with the sewer.

Special Fixtures

Sec. 305. When special fixtures or traps are required that do not conform to the provisions of this Code, the Building Inspector may, at his discretion, grant such privileges as he may deem proper.

Gas Fittings—Gas Mains and Meters

Sec. 306. All gas mains entering any building shall be thoroughly cemented into the wall and shall have a shut-off near the curb line. Gas meters shall not be placed underneath any stairway or in any clothes or storage closet, or in the dead space beneath the floors under show windows, or in room or hall for lodging purposes, and when located in any cellar or basement such location shall not be in any fuel or furnace room, but they shall be placed close to the front wall, at least four (4) feet above the floor and as near a window as possible with an unobstructed passageway leading thereto.

Burners and Fires

Sec. 307. The term "burner" shall apply to any single gas outlet consuming not less than six (6) or more than ten (10) cubic feet per hour, and the term "fire" to any single outlet consuming from fifty (50) to and not exceeding seventy-five (75) cubic feet per hour.

Sizes of Pipe

Sec. 308. The size of pipe used for illuminating purposes shall not be less, nor the length greater, to the number of burners stated than those specified in the following table, except that if the number of burners is not more than half the stated maximum, the length of run may be increased one-half.

Size of Pipe.	Greatest Length Allowed.	Greatest No. of Burners.
⅜ inch.....	10 feet	2
½ inch.....	30 feet	6
¾ inch.....	60 feet	20
1 inch.....	80 feet	35
1¼ inch.....	120 feet	60
1½ inch.....	160 feet	100
2 inch.....	200 feet	200
2½ inch.....	300 feet	300
3 inch.....	450 feet	450
4 inch.....	600 feet	750

But no riser from a meter shall be less than a three-quarter (¾) inch pipe.

In applying the above table, the number of burners to outlets in various locations shall be estimated as follows:

Parlor ceiling outlet.... 4 burners
Dining room ceiling outlet 4 burners
Bedroom ceiling outlet.. 3 burners
Kitchen ceiling outlet... 1 burner
Bracket and newel post outlets ..... 1 burner
Hall, pantry, washroom and bath room ceiling outlets ..... 1 burner

An outlet for a gas range or water heater or a gas log or grate shall be counted as equivalent to and not less than six (6) burners and all heaters shall have a valve on the service pipe.

Smaller pipe than half-inch (½) shall not be used for kitchen outlets in ceilings.

Quality of Pipe

Sec. 309. The pipe shall be of the best quality of wrought iron or steel pipe, with galvanized malleable iron fittings, and joints shall be made with white lead, preferably applied to the male threads.

No second-hand pipe shall be used, except that when a building is undergoing reconstruction or repair such gas pipe as is taken out and found in good condition may be re-run.

Supports and Grades

Sec. 310. All pipes shall be suitably supported and stayed with pipe hooks, straps and screws.

All pipes shall be properly graded, and, if practicable, toward the meter. A bracket outlet shall preferably be run as a riser than as a drop. No gas pipe shall be laid in cement, unless the pipe and channel in which it is placed are covered with tar, nor within six (6) inches of an electric wire.

Risers

Sec. 311. The rising line of pipes in all buildings shall be carried up on an inside partition out of the

reach of frost and shall be placed where the stop-cock can be readily got at. In buildings of large, undivided floor spaces the risers shall be run exposed at least six (6) feet distant from any window.

Drops or Outlets

Sec. 312. Drops or outlets shall not be left more than three-quarters (¾) of an inch below plastering, centre-piece, or woodwork.

Stop-Pins

Sec. 313. All stop-pins to keys or cocks or fixtures shall be screwed or pinned into place.

Capping and Inspection

Sec. 314. After the piping is run all openings shall be closed with iron caps and in no case shall lead caps be allowed, and all unused outlets shall be kept capped. All split pipe or defective fittings shall be removed and no pipe or defective fitting repaired with cement or lead will be allowed. No gas-fitters' cement shall be used except at a fixture joint. All pipes shall be examined and tested before said pipes are concealed, and due notice shall be given by the fitter to the Inspector when any pipe is ready for inspection.

Tests

Sec. 315. The gas piping in any building shall be tested air-tight by the gas fitter under the direction of the Inspector, viz: First, when roughing in is completed and before the floors are laid; and, second, when the entire building is completed and the work ready for gas fixtures. Said tests shall be made by having all openings closed and subjecting the piping to an air pressure test that will support a column of mercury two (2) inches in height at least fifteen (15) minutes, provided that in no case shall a spring or steam gauge be used.

There shall be a final test of all fixtures and pipes by two (2) inches of mercury, which must stand five (5) minutes; this test to be made in the presence of the Inspector.

On proof of a satisfactory test the Inspector shall issue a certificate of inspection to the fitter, covering said work.

Gas Brackets

Sec. 316. All gas brackets shall be placed at least two feet six inches below any ceiling or woodwork unless the same is properly protected by a shield, in which case the distance shall not be less than eighteen (18) inches. No swinging or folding gas bracket shall be placed against any stud partition or woodwork. No gas bracket on any lath and plaster partition or woodwork shall be less than five (5) inches in length, measured from the burner to the plaster surface or woodwork, and shall be at least nine inches from any door or window casing. No outlet shall be placed behind any door or within four (4) feet of any meter.

Hose Outlets

Sec. 317. No independent connection for a hose outlet shall be placed above the stiff joint on any chandelier or pendant, but such connection shall be brought down to an accessible point.

Extensions or Alterations

Sec. 318. Where any material extensions or alterations are to be made the work shall be done in conformity to the provisions of this Title.

Condemnation and Removal

Sec. 319. The Inspector shall promptly condemn and order the removal, reconstruction or repair of any system of gas piping or portion thereof, which does not conform to these regulations. He shall order the necessary repairs to be made when defects are found in any old system of gas piping or fixtures connected therewith, and such repairs shall be promptly made by the responsible party upon service of order or notice.

Electrical Work—Electrical Wiring

Sec. 320. No electrical wiring or installation of electrical apparatus or appliances for furnishing light, heat, or power shall be introduced into or placed in any building or structure in the Town of Milford, except in compliance with the rules and regulations of the National Board of Fire Underwriters, known as the "National Electrical Code,"

and the said rules and regulations are hereby made a part of the requirements of this Code. The installation of all such electrical work shall be subject to the approval of the Building Inspector.

Knob and tube work prohibited.

CHAPTER XV.

HOISTWAYS, ELEVATORS, AND WELL HOLES.

Well Holes, etc., to be Guarded

Sec. 321. Every hoistway, hatchway, stairway, or well hole in every building shall hereafter be securely guarded by means of proper gates, railings, or guards, or other inclosures, which may be approved by the Building Inspector. Such guards or railings shall not be less than three feet in height nor the lower rail more than one foot above the floor, and shall be so constructed as to effectually prevent persons from falling into such hoistways, hatchways, stairways, or well holes. The owners, lessees, or occupants of any building in the Town of Milford in which hatchways or well holes exist, or shall hereafter be constructed, shall cause the same to be effectually barred, or inclosed, for the prevention of accidents therefrom.

It shall be the duty of the Building Inspector to notify such persons mentioned in the preceding section who have hatchways or well holes in their buildings, to have the same properly guarded or inclosed.

Openings in Fireproof Walls

Sec. 322. In every building hereafter erected or altered to be used for manufacturing or mercantile purposes, in which there shall be hoistways, elevators, or well holes, not inclosed in walls, constructed of brick or other fireproof material and provided with fire doors, the openings thereof through and upon each floor of said buildings shall be provided with approved automatically closing, metal clad, hatch doors for every such hoistway, elevator or well hole. Outside windows or openings into every elevator shaft or hoistway shall have such sign or device to indicate the existence of said shaft or hoistway as shall be approved by the Building Inspector.

Elevator Shafts Inclosed

Sec. 323. Elevator shafts in all mercantile and manufacturing buildings, exceeding three stories in height, hereafter built or altered, shall be inclosed with walls or partitions of approved fireproof material, and have automatically closing metal clad doors at all openings thereto.

Adjoining Stairway Inclosed

Sec. 324. In all buildings hereafter erected or altered, wherever elevators are placed in the well holes of or adjacent to stairways, such elevators and stairways shall be inclosed with partitions of approved fireproof materials.

Grating in Elevator Shafts

Sec. 325. There shall be placed below the machinery and sheaves at the top of every elevator shaft, hereafter constructed or altered, a substantial grating or screen of iron, so constructed as to prevent persons or objects from falling into such shafts, and sufficiently open to permit flames and smoke to pass through to the skylight or windows. If such shaft shall be floored over with a solid flooring, such flooring shall not cover more than one-half of the area of such shaft, and at least one-half of the area of such shaft shall be covered with an approved open grating.

Skylights

Sec. 326. In all buildings hereafter erected or altered, the roof immediately over hoistway, elevator stair, open shaft or well hole, shall be provided with a skylight containing not less than twenty square feet of glass; said glass shall be set in metal sashes or frames, in lights of not less than two hundred square inches each, and shall not exceed one-eighth inch in thickness. There shall be suspended immediately below this glass a strong wire netting. Provided, that if in the sides of an elevator pent house, or at the top of any such shaft or well hole, there be windows having thirty-five square feet of glass of the thickness herein specified for skylights, then the

Building Inspector may, at his discretion, permit the skylights above described to be omitted.

CHAPTER XVI.
STAIRWAYS AND DOORS.

Stair Halls—Number—Width—Location

Sec. 327. All non-fireproof buildings, in which, above the first floor there is to be, or in which provision is made for an occupation for the same at times by fifty to one hundred or more persons employed, engaged, transient, or guests therein, there shall be at least two stair halls, each not less than three feet six inches wide.

The width of the stairs shall be increased six inches for each increment of fifty persons or part thereof over one hundred, up to three hundred, or when five feet is reached. If the number of persons so occupying such premises exceed six hundred three stairs, five feet in width each, shall be constructed.

In all cases, the stairs shall be located at as great a distance as practicable from each other, and in cases where the persons so occupying such buildings are not all on one floor, the widths and number of stairways in the several stories shall be governed as above by the total number of persons who will at any time be on any floor. All persons above any given story shall be counted in addition to the persons on that story.

Lot Area—Stairs Required

Sec. 328. Irrespective of the number of persons occupying public buildings covering a lot area exceeding five thousand square feet, and not exceeding seventy-five hundred square feet, there shall be provided at least two continuous lines of stairs, and every such building shall have at least one continuous line of stairs, for each five thousand square feet of lot area covered or part thereof, in excess of that required or seventy-five hundred square feet of lot area.

When any such building covers an area of lot greater than fifteen thousand square feet the number of stairs shall be increased proportionately. For fireproof buildings, one less flight of stairs than above called for shall be required in each case, unless the floor area exceeds seventy-five hundred square feet, in which case there shall not be less than two stairs.

Stairs in Tenement Houses—Width

Sec. 329. Every tenement or building, occupied by three or more families, and every two family dwelling constructed in flats which has rooms used or intended to be used as sleeping rooms on the attic floor, shall have at least two flights of stairs, not less than three feet wide in the clear, which shall extend from the entrance floor to the top story, and every apartment shall be directly accessible from an entrance hall by means of at least one such flight of stairs, said stairs not to contain winders.

If there are more than sixteen rooms above the second floor, exclusive of bath and toilet rooms, the width of the hallways and stairs be increased six inches for every additional sixteen rooms or fraction thereof, up to eight rooms, or until the width of five feet is reached.

A wooden door shall be provided in the partition separating apartments on the attic floor of two family dwellings constructed in flats.

Stairways in School Buildings

School buildings, if more than one story in height and having more than three rooms above the first story, shall have at least two separate and distinct stairways, as far remote from each other as practicable. School buildings or all buildings containing a general assembly room, shall have stairs and fire escapes proportioned as prescribed for Assembly Halls.

Assembly Halls—Stairs—Width—Fire Escapes—Metal Stairs

Sec. 331. Every hall seating three hundred persons and not more than six hundred persons, shall have at least two separate and distinct stairways for ingress and egress, the

same to be placed as far apart as possible.

Every hall seating more than six hundred persons and not more than twelve hundred persons, shall have at least three separate and distinct stairways.

All stairs for ingress and egress leading to any assembly hall or halls, shall be at least four feet wide and provided with hand rail on each side. The rise of the stairs shall not be more than seven and one-half inches to each step and the tread not less than ten and one-half inches.

In addition to the above described stairway, assembly halls shall be provided with fire escapes as provided by law, provided that in assembly halls having a greater seating capacity than seven hundred and fifty the aggregate width of such emergency exits which shall be provided for each floor, balcony and gallery of such building, shall be one-half of that provided for the main exits, and no emergency exit, door or stairway shall be less than three feet in width.

All metal stairs shall have the treads and landings supported the whole width and length of same on sheet metal of sufficient strength to sustain the imposed load required.

Width of Outside Doors

Sec. 332. The aggregate width of doors opening at the street level, for halls rented or used for public assemblies of any kind, for school houses, orphan asylums, insane asylums, reformatories of any kind, shall be at least equal to the aggregate width of stairways; extra width shall be added to accommodate occupants of first floor, and such doors shall not be locked during business hours, or while such buildings are occupied by large numbers of people, and all such doors shall open outwardly.

Doors Open Outward

Sec. 333. The outside doors of all assembly halls, theatres, churches, factories, and other buildings occupied by large number of people shall be made to open outward.

CHAPTER XVII.

MISCELLANEOUS.

Board Acts on Matters Not in Code

Sec. 334. All matters and questions relating to building or building operations not covered or provided for in this Code shall be decided by and left to the discretion of the Board of Selectmen and their decision shall be as final and binding as if contained in this Code.

Appeal—Board of Appeal

Sec. 335. Whenever any person, persons, firm, or corporation considers himself aggrieved by any ruling, decision, or order of the Board of Selectmen relative to any matter concerning buildings or building operations in the Town of Milford, or any matter over which the Board of Selectmen has authority, he shall have the right to appeal to a board of arbitration, provided the party so appealing executes with a responsible surety a proper bond conditioned to pay all expenses incident to such appeal.

The said Board shall consist of three persons, one of whom shall be selected by the Board of Selectmen, one by the party appealing, and the other by the two members thus selected.

The decision of said Board on any matter brought before it shall be final.

Penalty

Sec. 336. Every person, persons, firm, or corporation, violating any of the provisions of this Code, where the penalty is not otherwise prescribed, shall be fined not more than Fifty Dollars upon conviction for each violation.

Sec. 337. This ordinance shall take effect upon its adoption and approval.

Public hearing January 24, 1918.

Approved and Adopted by Board of Selectmen, January 30, 1918.

Signed: MANLEY J. CHENEY, ROBERT A. SYRETT, WILLIAM F. RENAUD } Selectmen of the Town of Milford

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